

1957

ANNUAL REPORT

ANNUAL REPORT
COOK INLET DISTRICT
1957 SEASON

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Anchorage, Alaska

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INTRODUCTION

The following is a report of the Fish and Wildlife Service, Bureau of Commercial Fisheries, Management and Enforcement activities in the Cook Inlet and Resurrection Bay areas for 1957.

The fishing season of 1957 can generally be summed up by one word, "failure". Had there no been a heavy chum salmon run, Cook Inlet would have had a pack slightly over 100,000 cases. Cook Inlet's red salmon pack has been fairly stable over a period of years, averaging better than 100,000 cases per year; the 1957 pack of 59,206 cases is the lowest on record since 1931. The escapement of red salmon was equally as poor as the catch. Spawning ground count areas, used for the fifth successive year, indicates poor escapements in all streams on the West side of the Inlet and poor to fair in the East side streams. The early runs in the Upper Upper Russian River and the regular return in Bear Creek were by far the best runs in the whole Inlet. It is noteworthy that these two streams have had fairly stable escapements for the past several years. The English Bay run, a former major run, was, on the other hand, dwindled down to a few thousand fish per year.

The king salmon run, like the red run, was extremely poor. The pack of 12,466 cases is about half that normally put up. The twenty-five year average is approximately 23,000 cases. King salmon escapement surveys have been inconclusive at best. Surveys, made when time and travel allowed, indicated a fair escapement in those streams where kings are known to spawn. Two new spawning creeks on the Susitna River system were located by the River Basin staff in 1956, and one on the Kenai River system was located by our own Research staff this year and they have been added to the growing list of known king salmon spawning systems. A great deal of exploratory work is still needed to catalog all of the king spawning areas and to set them up for a systematic yearly survey.

The pink salmon run was a bitter disappointment, especially to the fisherman who fishes only a beach seine. No run was expected in the Upper Inlet, but a good run had been expected in the Southern and Outside Districts. No adequate reason for such a poor run is forthcoming at this time. Escapements, likewise, were generally very poor. Fort Dick Creek had probably the best escapement, due in large part to good protection.

The chum salmon run, the best Cook Inlet has ever had, cannot be explained either. The pack of approximately 127,000 cases is 35,000 cases greater than the highest previous year. A small portion of the pack is known to have come from the Outside District prior to its opening; the lack of funds and aircraft time prevented adequate protection. Chum salmon escapements were generally good; in several cases, Island Creek in Port Dick in particular, overrunning occurred.

The coho salmon run did not develop its normal pattern this year. Despite many set netters continuing to fish after the time when they would normally stop, the pack is the lowest on record. This lack of cohos appeared to be area-wide. Resurrection Bay is generally considered to be good coho area, but not in 1957.

The amount of gear fished in Cook Inlet conformed to our expectations. The number of drift boats registered increased from 276 in 1956 to 337 in 1957, and set nets from 463 to 474. The number of traps installed was reduced from 55 to 43; under the point system it was advantageous to have drift boats replace traps. The total number of gear units registered was 1356.

When it was announced that only one and a half day's fishing would be allowed, the industry and fishermen requested a meeting to discuss the situation. A meeting was held at Iliamna on June 26, attended by representatives of the Service, industry, and fishermen. It was pointed out to the Service that some duplication of gear existed, and that some gear registered would not fish. It was also felt that a dory drift boat should not be as heavily penalized by the gear time table as the larger boats are. The Service agreed to announce allowable fishing time prior to each period after first compiling the gear actually fishing by count and by fish ticket. At no time during the red salmon season, July 1 through July 27, did the amount of gear fishing approach the top limit of the gear allowed for a two day a week fishing.

The vessel operation was somewhat different in 1957 than in previous years. The Steelhead, a 38 foot Coastguard conversion, was sent to Cordova, and in its place was assigned an 80 foot power barge, the Widgeon. Due to mechanical failures and some personal difficulties, the Widgeon did not provide the District with the type of operation to be expected from such a vessel. The vessel Teal reported to Seward in early May to assist in replacing stream markers and to put out gas and boats at the various streamguard camps. The Teal departed Cook Inlet for Sand Point early in June. It might be well to mention that many of the stream markers were placed by use of the Teal's radar set. This method proved to be extremely satisfactory on the west side of the Inlet where nearly all of the closed areas are one mile in extent.

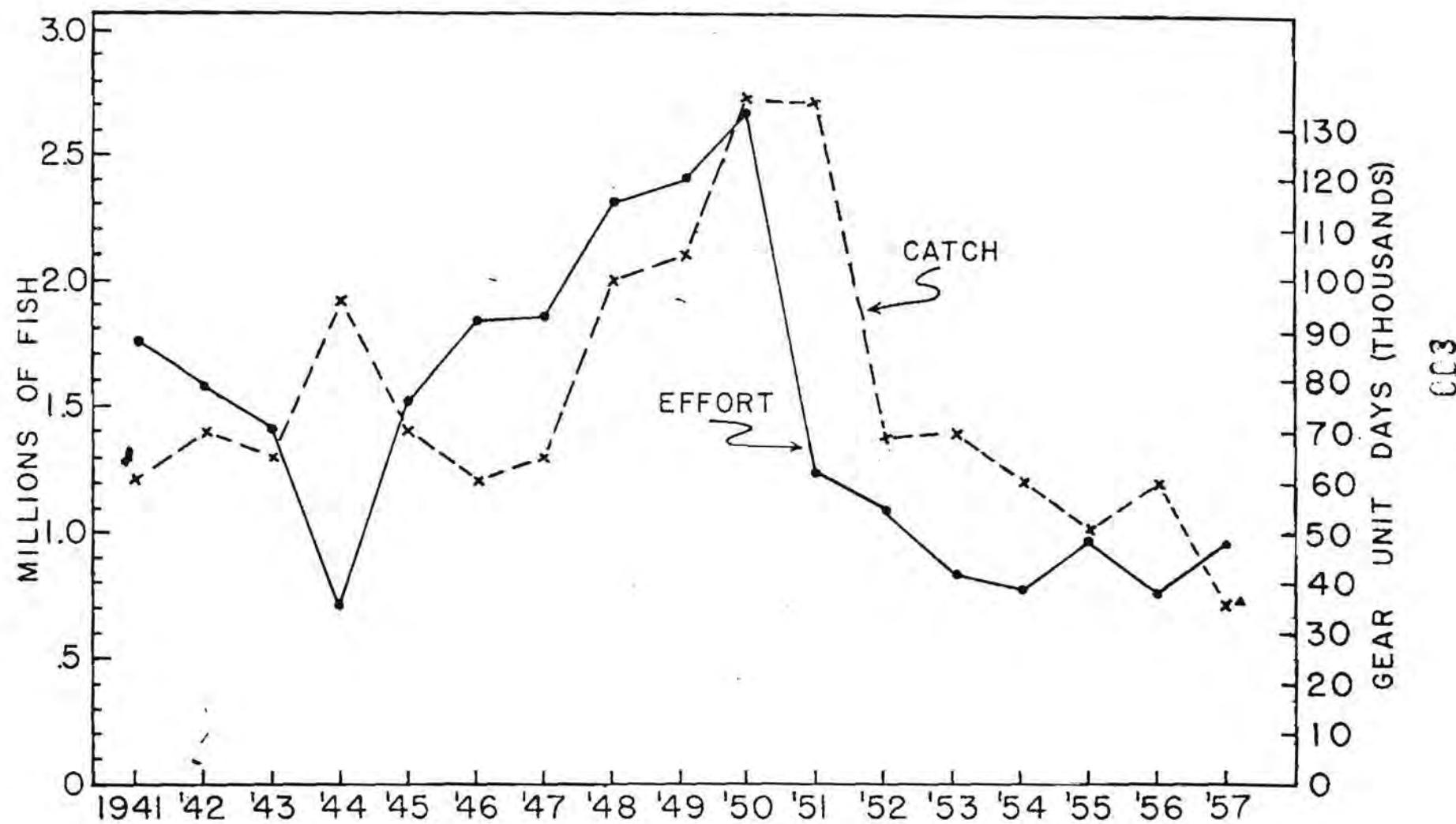
The enforcement program was slightly modified in order that Kasilofak Bay streams could receive some token protection. Streamguards were placed so that the most important runs received protection. The other streams were patrolled by boat and by air.

The stream clearance crew, consisting of two men, cleared only those streams needing major attention. Due to an extremely dry summer, this amount of clearance proved inadequate in many streams. It often became a race between the crew, the beaver, and the ascending fish.

The stream survey program was carried out by two two-man parties following the same procedure initiated in 1952 - 1953 by Carl Elling. Additional coverage was necessary to look for F.R.I. and F.W.S. tagged fish.

FIGURE 1.

COOK INLET REDS
CATCH AND FISHING EFFORT



FISHERY OPERATORS

COOK INLET DISTRICT

1957

<u>NAME AND BUSINESS ADDRESS</u>	<u>SUPERVISORY PERSONNEL</u>	<u>PLANT LOCATION</u>	<u>NO. LINES</u>
Alaska Fresh Company Homer, Alaska	Dick Maltiner, Owner	Homer Spit	hand pack
Alaskan Sea Foods Box 127 Homer, Alaska	Eugene V. Browning, Supt.	Homer Spit	
Alaska Year Round Canneries, Incorporated Seldovia, Alaska or 5355 - 28th N.W. Seattle 7, Washington	J. J. Lind, Supt. Arthur Aspaas, Bkpr.	Seldovia	1 1/2
Burman Packing Company Ninilchik, Alaska or 6518 - 27th N.W. Seattle, Washington	O. R. Bertosen, Mgr.	Ninilchik	1/2 lb. hand pack
Cook Inlet Packing Co. Seldovia, Alaska or 303 & 30th Calmar Bldg. Seattle, Washington	W. A. Katus, Mgr. Margaret Mason, Bkpr.	Seldovia	Not operative*
Guard Packing Co. Box 599, Anchorage or 615 Iomega Bldg. Seattle, Washington	H. J. Baerd, Owner S. T. Olson, Supt. Ruth Johnson, Bkpr.	Anchorage	1 1/2 HS
Fidalgo Island Packing Co., Port Graham, Alaska or 2360 Commodore Way Seattle, Washington	Vance Sutter, Owner Carl E. Johnson, Supt. R. H. Newell, Bkpr.	Port Graham	2 HS
Kenai Packers Kenai, Alaska or 2601 - 42nd St. West Seattle, Washington	H. A. Danbenaspeck, Owner F. H. McGill, Bkpr.	Kenai	1 1/2 HS

FISHERY OPERATORS
(Cont'd.)

<u>NAME AND BUSINESS ADDRESS</u>	<u>SUPERVISORY PERSONNEL</u>	<u>PLANT LOCATION</u>	<u>NO. LINES</u>
Libby, McNeill & Libby Alaska or P. O. Box 1902 Spokane, Washington	Ray McFarland, Supt. D. A. Zeiger, Mgr.	Kenai	1 1/2 HS
Pacific American Fisheries, Incorporated 11 Harris Avenue Bellingham Washington	E. G. Tarrant Exec. Vice-President	Snug Harbor	Not operative*
All fish for this company will be custom canned by Snug Harbor Packing Co., Snug Harbor, Alaska			
Cook Inlet Packing Co. Portlock, Alaska or 11 West 36th Street Seattle, Washington	Erling Nilson, Mgr.	Portlock	1/2 lbs.
Anchorage Bay Company P.O. Box 3, Seward or 11 Smith Tower Seattle, Washington	William H. Everett	Seward	1 HS
Seldovia Bay Packing Co. Seldovia, Alaska or 165 Northlake Place Seattle 3, Washington	Samuel Rubinstein, Owner Harry Tallman, Supt.	Seldovia	1 1/2 HS
Ken Seafoods 366 "F" Street Anchorage, Alaska	Charles L. Simon, Owner	Kenilworth	Hand pack
Harbor Packing Co. Harbor (Kenai) or 11 Smith Tower Seattle, Washington	J. R. Fribrook, Supt.	Snug Harbor	1 1/2 HS*
This company custom canning for Cook Inlet Packing Co. and for Pacific American Fisheries Incorporated.			
Water Packing Co. General Fish Co., Dock 11 "F" Street Anchorage, Alaska	Ray Coffin, Owner Richard Coffin, Supt.	Anchorage	Hand pack

FISHERY OPERATORS
(Con't.)

<u>NAME AND BUSINESS ADDRESS</u>	<u>SUPERVISORY PERSONNEL</u>	<u>PLANT LOCATION</u>	<u>PRODUCTS</u>
FRESH AND FROZEN FISH			
Anchorage Cold Storage 280 - 1st Street Anchorage, Alaska	H. W. Odon, Owner	Anchorage	Salmon
Berman Packing Co. Ninilchik, Alaska or 104 Colman Building Seattle, Washington	O. R. Bertosen, Owner	Ninilchik	Salmon and king crab
Marilee Investment Co. Anchorage, Alaska	James Suspter, Owner	Seward	Bass, red snapper, cod salmon, crab shrimp, halibut, and herring bait
Spaniard Lockers Box 1056 Spaniard, Alaska	S. G. Runner, Owner	Spaniard	Salmon
John S. Swiss 119 "P" Street Anchorage, Alaska	John S. Swiss, Owner	Anchorage	King salmon, fresh

FACILITY OF RATORS
(Con't.)

<u>NAME AND ADDRESS</u>	<u>SUPERVISORY PERSONNEL</u>	<u>PLANT LOCATION</u>	<u>PRODUCTS</u>
FIELD CURE OPERATORS			
Peninsula Baked Salmon Mile 150, Sterling Highway Alaska	A. S. Ooalsley, Owner	Ninilchik	Salmon
Port Chatham Packing Co. 632 West 36th Street Seattle, Washington	Erling Wilson, Mgr.	Portlock, Alaska	Cured coho
Walt and Laura Pederson Sterling Alaska	Walt Pederson, Owner	Sterling, Alaska	Salmon
Seldovia Bay Packing Co. Seldovia, Alaska or 1455 Northlake Place Seattle, Washington	Samuel Rubinstein, Owner Chuck Hendrix, Mgr.	Seldovia	Cured kings
Simon Seafoods 1566 "W" Street Anchorage, Alaska	Charles L. Simon, Owner	Kasilof, Alaska	Cured kings

FISHERY OPERATORS
(Con't.)

<u>NAME & BUSINESS ADDRESS</u>	<u>SUPERVISORY PERSONNEL</u>	<u>PLANT LOCATION</u>	<u>PRODUCTS</u>
COLD STORAGE PLANTS			
Anchorage Cold Storage 110 - 1st Avenue Anchorage, Alaska	N. W. Odem, Owner	Anchorage	Salmon, fresh and frozen
Berman Packing Co. 101 Colman Bldg. Seattle, Washington	O. R. Bertesen, Owner	Minilehik	Salmon and king crab
Spennard Lockers Box 1056 Spennard, Alaska	S. G. Rinner, Owner	Spennard, Alaska	Salmon
Seldovia Bay Packing Co. Seldovia, Alaska or 155 Northlake Place Seattle, Washington	Charles Hendrix, Supt.	Seldovia, Alaska	Halibut, crab and salmon

TRAP OPERATORS

COOK INLET

1957

ALASKA YEAR-ROUND CANNIBLES CO., 5355 28th AVENUE, N.W., SEATTLE 7, WASHINGTON

- 57-206H
FMS #50 U. P. Co. "Cottonwood" hand trap No. 1, situated on northwest shore of Cook Inlet, approximately 1.0 nautical miles northeast of Three Mile Creek and 7.5 nautical miles northeast of North Foreland light. Latitude 61 degrees 09 minutes 27 seconds North, Longitude 151 degrees 02 minutes 59 seconds West.
- 57-207H
FMS #84 A.Y.R.C. "Clam Gulch" hand trap No. 3, situated on west coast of Kenai Peninsula near Clam Gulch, approximately 14.4 nautical miles northeast of Ninilchik Village in Cook Inlet. Latitude 60 degrees 14 minutes 58 seconds North, Longitude 151 degrees 23 minutes 38 seconds West.
- 57-069H
FMS #87 A.Y.R.C. "Cores Bend" hand trap No. 4, situated on west coast of Kenai Peninsula on Cores Bend beach approximately 10.4 nautical miles northeast of Ninilchik Village, Cook Inlet. Latitude 60 degrees 11 minutes 26 seconds North, Longitude 151 degrees 27 minutes 27 seconds West.
- 57-088H
FMS #62 A.Y.R.C. "Kalgin Island" hand trap No. 5, situated on southwest end of Kalgin Island approximately 10.0 nautical miles southwest of Kalgin Island light in Cook Inlet, Alaska. Latitude 60 degrees 21 minutes 44 seconds North, Longitude 152 degrees 03 minutes 51 seconds West.
- 57-087H
FMS #60 A.Y.R.C. "Kalgin Island" hand trap No. 6, situated on north shore of Kalgin Island approximately 1.8 nautical miles northwest of Kalgin Island in Cook Inlet. Latitude 60 degrees 30 minutes 05 seconds North, Longitude 151 degrees 52 minutes 59 seconds West.
- 57-086H
FMS #98 A.Y.R.C. hand trap No. 2, situated on west coast of Kenai Peninsula, approximately 4.0 nautical miles southwest of Ninilchik Village in Cook Inlet. Latitude 59 degrees 59 minutes 41 seconds North, Longitude 151 degrees 43 minutes 14 seconds West.

COOK INLET PACKING CO., 304 COLMAN BUILDING, SEATTLE 4, WASHINGTON

- 57-0308
PNB #97 C.I.P. trap No. 1, situated on east shore of Cook Inlet, approximately 2.1 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 04 minutes 56 seconds North, Longitude 151 degrees 37 minutes 49 seconds West.
- 57-0318
PNB #94 C.I.P. Trap No. 2, situated on east shore of Cook Inlet, approximately 4.25 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 06 minutes 32 seconds North, Longitude 151 degrees 35 minutes 05 seconds West.
- 57-0325
PNB #93 C.I.P. trap No. 3, situated on east shore of Cook Inlet, approximately 5 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 07 minutes 05 seconds North, Longitude 151 degrees 33 minutes 57 seconds West.
- 57-0334
PNB #92 C.I.P. trap No. 4, situated on east shore of Cook Inlet approximately 6.25 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 07 minutes 57 seconds North, Longitude 151 degrees 32 minutes 06 seconds West.
- 57-0348
PNB #91 C.I.P. trap No. 5, situated on east shore of Cook Inlet, approximately 7.5 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 08 minutes 54 seconds North, Longitude 151 degrees 30 seconds 42 minutes West.
- 57-0358
PNB #90 C.I.P. trap No. 6, situated on east shore of Cook Inlet, approximately 8 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 09 minutes 19 seconds North, Longitude 151 degrees 30 minutes 10 seconds West.
- 57-0368
PNB #89 C.I.P. trap No. 7, situated on east shore of Cook Inlet, approximately 8.5 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 09 minutes 45 seconds North, Longitude 151 degrees 29 minutes 36 seconds West.
- 57-0378
PNB #86 C.I.P. trap No. 8, situated on east shore of Cook Inlet, approximately 12 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 12 minutes 41 seconds North, Longitude 151 degrees 25 minutes 25 seconds West.
- 57-0388
PNB #83 C.I.P. trap No. 9, situated on east shore of Cook Inlet, approximately 15.75 nautical miles northeast of Ninilchik Village, Alaska. Latitude 60 degrees 16 minutes 10 seconds North, Longitude 151 degrees 23 minutes 13 seconds West.

EMILY E. INGERSOTH and HAROLD JOHNSON, c/o LIBBY, MCNAUL & LIBBY, 68 HAMLIN,
BOX 1902, SEATTLE 11, WASHINGTON

57-221P Ingessoth & Johnson hand trap No. 1, local name "E. E. & H. J."
FWS #66 trap, situated on the west coast of Kenai Peninsula approximately
3.5 nautical miles southerly of East Foreland light on the east
shore of Cook Inlet. Latitude 60 degrees 39 minutes 58 seconds
North, Longitude 151 degrees 22 minutes 26 seconds West.

TIDALOG ISLAND PACKING CO., 2360 CONYARD WAY, SEATTLE 92, WASHINGTON

57-103P Port Graham cannery "Salandato" pile trap No. 5, situated on
FWS #66 west coast of Kenai Peninsula on Salanato Beach, approximately
4.6 nautical miles southeast of East Foreland light in Cook
Inlet. Latitude 60 degrees 38 minutes 56 seconds North,
Longitude 151 degrees 21 minutes 24 seconds West.

57-102P Port Graham cannery "The Sisters" pile trap No. 10 situated on
FWS #61 the west coast of Kenai Peninsula, approximately 2.2 nautical
miles south of Cape Kasilof in Cook Inlet. Latitude 60 degrees
20 minutes 00 seconds North, Longitude 151 degrees 22 minutes
57 seconds West.

57-099P Port Graham cannery "Bluff Point" pile trap No. 1, situated on
FWS #101 the southwest coast of Kenai Peninsula, approximately 5.2
nautical miles southeast of Anchor Point in Cook Inlet. Latitude
59 degrees 41 minutes 49 seconds North, Longitude 151 degrees
46 minutes 22 seconds West.

57-100P Port Graham cannery "Seldovia" pile trap No. 2, situated on the
FWS #103 southwest coast of Kenai Peninsula, approximately 0.5 nautical
miles west of Point Kaskowhak near the west entrance of Seldovia
Bay in Cook Inlet. Latitude 59 degrees 26 minutes 50 seconds
North, Longitude 151 degrees 45 minutes 56 seconds West.

57-101P Port Graham cannery "Muhle Point" or Zenas" pile trap No. 1
FWS #102 situated on southwest coast of Kenai Peninsula on Muhle Point
in Kachemak Bay (an arm of Cook Inlet). Latitude 59 degrees
26 minutes 56 seconds North, Longitude 151 degrees 34 minutes
40 seconds West.

ERIC J. FRINROCK, 2401 ROSEBUD PLACE, SEATTLE, WASHINGTON

57-175H E.J.F. No. 1 Bone trap, situated on the east shore of Chisik
FWS #80 Island, approximately 2.7 nautical miles north of Chisik Island
light in Cook Inlet. Latitude 60 degrees 08 minutes 21 seconds
North, Longitude 152 degrees 33 minutes 29 seconds West.

57-176H E.J.F. No. 2 Salanato, situated on the west coast of the Kenai
FWS #72 Peninsula, on Salanato Beach, approximately 7.1 nautical miles
southeast of East Foreland light in Cook Inlet. Latitude 60
degrees 36 minutes 27 seconds North, Longitude 151 degrees 20
minutes 25 seconds West.

Eric J. Pribrook (Continued)

57-177H A.J.F. No. 3 North Kalgin, situated on the north shore of Kalgin Island approximately 2.6 nautical miles northwest of Kalgin Island light in Cook Inlet. Latitude 60 degrees 30 minutes 36 seconds North, Longitude 151 degrees 54 minutes 35 seconds West.

ZEVIN T. GRABONSKI, NINILCHIK, ALASKA

57-111H Hand trap situated 5 miles north of Ninilchik Village, Alaska. FWS #95 Latitude 60 degrees 06 minutes 07 seconds North, Longitude 151 degrees 36 minutes 04 seconds West.

TORVALD JENSEN, 5355 28th AVENUE, N.W., SEATTLE, WASHINGTON

57-089H Torvald Jensen T. J. No. 2 hand trap, situated near Cape Starichkov, Kenai Peninsula, east shore of Cook Inlet, Alaska. FWS #99 Latitude 59 degrees 54 minutes 16 seconds North, Longitude 151 degrees 46 minutes 00 seconds West.

JACK LEWIS, KENAI, ALASKA

57-020H Hand trap located 6 miles north of Kenai at the south of Salamat Creek, on the east shore of Cook Inlet, and will be called Homestead Trap. FWS #71 Latitude 60 degrees 37 minutes 09 seconds North, Longitude 151 degrees 20 minutes 33 seconds West.

LIBBY, McNEILL & LIBBY, 68 HAMLIN STREET, P.O. BOX 1902, SEATTLE 1, WASHINGTON

57-214H Libby, McNeill & Libby, Kenai cannery hand trap, local name "Corea Bend" No. 9, situated approximately 12 nautical miles southerly of Cape Kasilof, Kenai Peninsula, and in Cook Inlet, Alaska. FWS #88 Latitude 60 degrees 10 minutes 22 seconds North, Longitude 151 degrees 26 minutes 47 seconds West.

57-218H Libby, McNeill & Libby, Kenai cannery hand trap, local name "Waterfall" situated on east shore of Cook Inlet, approximately 9 nautical miles southerly of Cape Kasilof, Alaska. FWS #85 Latitude 60 degrees 13 minutes 09 seconds North, Longitude 151 degrees 24 minutes 51 seconds West.

57-219H Libby, McNeill & Libby, Kenai cannery hand trap, local name "Salamat f2", situated on east shore of Cook Inlet on Salamat Beach, approximately 4.0 nautical miles south of East Farreland light in Cook Inlet, Alaska. FWS #67 Latitude 60 degrees 39 minutes 33 seconds North, Longitude 151 degrees 21 minutes 57 seconds West.

LIBBY, McWILL & LIBBY (Continued)

57-2168
FWS #96

Libby, McWill & Libby, Kenai cannery hand trap, local name "Minilchik" situated on east shore of Cook Inlet, approximately 2.75 nautical miles northerly from village of Minilchik, Alaska. Latitude 60 degrees, 05 minutes 26 seconds North, Longitude 151 degrees 37 minutes 19 seconds West.

57-2178
FWS #75

Kenai cannery hand trap, local name "Hoosie Trap", situated on east coast of Cook Inlet approximately 4.4 nautical miles south of the mouth of Kenai River, Cook Inlet, Alaska. Latitude 60 degrees 26 minutes 26 seconds North, Longitude 151 degrees 16 minutes 49 seconds West.

57-2198
FWS #77

Kenai cannery hand trap, local name "Kalfonski", situated on east shore of Cook Inlet, approximately 5.6 nautical miles south of the mouth of Kenai River, Cook Inlet, Alaska. Latitude 60 degrees 27 minutes 17 seconds North, Longitude 151 degrees 16 minutes 52 seconds West.

57-2208
FWS #82

Kenai cannery hand trap, local name "Porcupine", situated on east shore of Cook Inlet, approximately 5.5 nautical miles south of Cape Kasilof and just southeast of the Sisters, Alaska. Latitude 60 degrees 16 minutes 43 seconds North, Longitude 151 degrees 23 minutes 02 seconds West.

URIA LINDGREN, c/o LIBBY, MCWILL & LIBBY, 88 HAMLIN STREET, P.O. BOX 1902,
SPRINGFIELD, MASSACHUSETTS

57-2209
FWS #65

Uria Lindgren hand trap No. 1, local name "Wikishka Bay Trap", situated on the northwest coast of Kenai Peninsula, approximately 3.2 nautical miles northeast of East Foreland light on the east shore of Cook Inlet, Alaska. Latitude 60 degrees 44 minutes 30 seconds North, Longitude 151 degrees 18 minutes 16 seconds West.

WILLIAM MARKLEY, 1442 N STREET, ANCHORAGE, ALASKA

57-3028
FWS #52

Hand trap No. 1, located on the northwest shore of Cook Inlet, approximately 1.4 nautical miles southwest of North Foreland light. Latitude 61 degrees 00 minutes 46 seconds North, Longitude 151 degrees 23 minutes 44 seconds West.

CIVIC AMERICAN FISHERIES, INC., BELLEVUE, WASHINGTON

57-3148
FWS #70

"Salamat" pile trap No. 4, situated on west coast of Kenai Peninsula on Salamat Beach, approximately 5.2 nautical miles northwest of Kenai River entrance and approximately 5.9 nautical miles southeast of East Foreland light in Cook Inlet, Alaska. Latitude 60 degrees 37 minutes 46 seconds North, Longitude 151 degrees 20 minutes 45 seconds West.

Pacific American Fisheries, Inc., (Continued)

57-115P
PAK #7h "Kalifonski" pile trap No. 1, situated on west coast of Kenai Peninsula on Kalifonski Beach, approximately 3.7 nautical miles south of Kenai River entrance in Cook Inlet, Alaska. Latitude 60 degrees 29 minutes 05 seconds North, Longitude 151 degrees 16 minutes 44 seconds West.

PAUL A., MRS. C. P. and PAUL P. SHADIRA, JR., KENAI, ALASKA

57-069P
PAK #79 Kalifonski trap, situated on east side of Kalifonski Beach, Alaska. Latitude 60 degrees 26 minutes 18 seconds North, Longitude 151 degrees 17 minutes 02 seconds West.

BUSS HARBOR PACKING COMPANY, 1805 SMITH TOWER, SEATTLE, WASHINGTON

57-179H
PAK #78 S.H.P. Co. No. 1, Kalifonski, situated on the west coast of Kenai Peninsula beach, approximately 3.4 nautical miles north of Kasilof River entrance in Cook Inlet. Latitude 60 degrees 26 minutes 47 seconds North, Longitude 151 degrees 16 minutes 53 seconds West.

57-181H
PAK #58 S.H.P. Co. No. 3, Northwest Kalgin Island, situated on the northwest corner of Kalgin Island, approximately 3.8 nautical miles west of Kalgin Island and light, in Cook Inlet. Latitude 60 degrees 30 minutes 33 seconds North, Longitude 151 degrees 56 minutes 53 seconds West.

57-182H
PAK #57 S.H.P. Co. No. 4, Point Harriet, situated on the Alaska mainland shore, approximately 0.7 nautical miles northwest of Point Harriet. Latitude 60 degrees 24 minutes 11 seconds North, Longitude 152 degrees 15 minutes 13 seconds West.

LILLIAN WALLI, HOMER, ALASKA

57-069H
PAK #100 Mile driven hand trap, Latitude 59 degrees 51 minutes 15 seconds North, Longitude 151 degrees 48 minutes 03 seconds West.

TABLE 1

1957 SALMON PACK BY COMPANIES
Basis 48/14 Per Case
(Season Final Case Up)

COMPANY	RED S	KINGS	PINKS	CHUNS	COHOS	TOTAL
Alaska Year Round Canneries*	3,874	421	2,955	14,867	969	23,106
Berun Packing Company	2,148	212	76	5,256	762	8,451
Cook Inlet Packing Company	1,385	282	46	2	239	1,954
Evard Packing Company	8,981	6,163	41	8,853	3,325	27,386
Fidalgo Island Packing Company	6,535	656	4,066	16,620	264	28,335
Imai Packers	11,378	2,492	35	21,328	1,532	36,765
Libby, McNeill & Libby	10,645	1,364	583	17,649	769	31,010
Port Chatham Packing Company	1,634	—	1,250	5,172	18	6,274
Seldovia Bay Packing Company**	6,693	384	8,813	26,732	724	43,306
Sierra Seafoods	48	—	—	—	—	48
Song Harbor Packing Company	5,672	528	632	10,552	1,893	29,477
Tidewater Packing Company	13	11½	—	31½	51	107
TOTALS	59,206	12,664	18,716	127,062	10,566	228,219
<i>Incs Totals</i>	<i>60,314</i>	<i>13,913</i>	<i>18,744</i>	<i>127,950</i>	<i>10,947</i>	<i>231,868</i>

* Alaska Year Round Canneries case pack includes 181 cases of rods, 769 cases of pinks, and 1,106 cases of chum (a total of 2,058 cases) of Cook Inlet caught salmon for Resurrection Bay Company and 25 cases of rods, 252 cases of pinks, 1630 cases of chum and 5 cases of cohos (a total of 1,912 cases) of Cook Inlet caught salmon for Port Chatham Packing Company.

** Seldovia Bay Packing Company case pack includes 3,436 rods, 1 king, 84,562 pinks, 135,645 chum, and 150 cohos (a total of 223,796 salmon) caught in the Kodiak area.

TABLE 2
SUMMARY
COOK INLET PACKED
43/10 Basis
1930 - 1957

YEAR	REDS 5-Yr. Avg.	CORO	CINCH	PINK	KING	RED
1930	1930 - 1934	50,098	10,084	53,016	19,388	70,552
1931	68,968	30,016	5,376	31,212	13,123	37,765
1932		32,635	6,317	23,806	17,912	67,932
1933		16,119	5,277	5,951	14,710	98,510
1934		25,605	9,123	49,159	19,148	150,085
1935	1935 - 1939	11,716	11,651	22,888	19,015	100,855
1936	149,972	31,212	24,000	49,749	19,739	186,535
1937		11,445	12,374	24,206	24,983	108,722
1938		32,753	16,198	51,281	15,909	169,636
1939		13,132	20,750	15,627	15,770	183,916
1940	1940 - 1944	16,118	26,721	122,123**	16,022	130,159
1941	115,809	30,565	24,367	35,101	27,488	90,886
1942		58,093	39,715	51,992	28,628	98,207
1943		21,702	26,276	60,661	31,311	102,864
1944		25,562	23,203	96,520	25,699	156,932
1945	1945 - 1949	28,481	28,305	51,205	22,365	118,849
1946	126,390	31,627	31,580	59,465	17,025	105,614
1947		37,170	21,154	30,092	30,590	109,113
1948		29,461	38,067	75,677	32,688	133,628
1949		25,904	23,318	14,959	31,036	164,319
1950***	1950 - 1954	32,097	50,863	67,057	24,247	206,103
1951***	158,307	26,411	30,133	21,750	64,628	221,725
1952***		21,595	15,432	127,926**	24,706	128,401
1953***	1953 - 1957	20,477	56,627	27,342	28,982	122,079
1954***	96,185	32,956	91,979	135,353**	23,996	111,228
1955		13,698	29,160	62,454	15,034	79,006
1956		16,918	83,963	80,038	16,975	109,410
1957		10,566	127,062½	18,718	12,666½	59,206

1954 - 1957

1958

* Information compiled from reports submitted by individual packing companies.
** Unique pink runs in upper Cook Inlet.
*** Fish taken from Cook Inlet to Kodiak are included in these totals.

TABLE 3

COOK INLET 1957 PACK BY THE WEEK
 Cumulative 48/14 Basin
 Summer Season

WEEK ENDING	REDS	KINGS	PINKS	CHUKS	COKOS	TOTAL
June 1	39	2,832	—	—	—	2,921
June 8	233	5,909	—	—	—	6,142
June 15	655	7,213	1	85	—	8,094
June 22	1,725	10,215	43	226	—	12,247
June 29	3,215	10,691	321	658	423	15,336
July 6	7,653	11,061 $\frac{1}{2}$	794	3,838	490	23,836 $\frac{1}{2}$
July 13	23,465	11,458	2,158	23,189	671	60,941
July 20	48,548	11,691	3,680	18,115	2,677	114,681
July 27	53,816	11,964	7,262	68,782 $\frac{1}{2}$	6,134	147,958 $\frac{1}{2}$
August 3	55,876	12,134	11,803	99,593	7,727	287,193
August 10	58,294	12,274	15,480	110,857	9,274	286,179
September 7*	59,206	12,666 $\frac{1}{2}$	18,718	127,062 $\frac{1}{2}$	10,366	228,215

* Final case-up count.

SAMPLING OF COMMERCIAL FISHERY

1957

To obtain an age analysis of the 1957 red salmon run, the Cook Inlet commercial fishery was systematically sampled as has been the policy since 1952. David Patrick, a fishery aide, was stationed at the Libby, McNeill & Libby Cannery at Kenai from July 3 to July 31, which covers the peak of the fishing effort. Several modifications in the sampling methods were made this season which were:

1. Reduction of the sample size to 100 fish as opposed to 200 in the past.
2. Taking of scales from every fifth fish instead of the first twenty males and females.
3. Measurements taken exclusively by metric calipers via the measuring machine developed by the Fisheries Research Institute.
4. Sampling aboard the cannery tenders during deliveries instead of at the cannery itself.

We feel the above changes allow a more efficient utilization of effort while producing equally valid results. A total of 14 samples were taken this season; seven from driftnet gear, four from setnets, and three from traps.

A means of closely following the progress of the fishery through the peak of the spawning migration is known to be a desirous tool for proper management of a fishery. An initial attempt was made last season to obtain this information through a progressive catch analysis. The Kenai sampler utilized records of two major Cook Inlet canneries (Libby, McNeill & Libby and Kenai Packers) to obtain a breakdown of the catch by gear and area for each fishing period. This information was wired to the Anchorage Office following each fishing period and closely analyzed. Comparisons to determine the validity of this sampling method will be made following receipt of the entire Cook Inlet catch analysis derived from 1957 fish tickets and compiled by the F&G Statistical Unit.

Several points of interest from our catch analysis will now be mentioned, but it should be borne in mind that they were obtained by sampling methods which may be proven unreliable at a later date. Red and chinook salmon comprised the bulk of the 1957 commercial catch and their relative abundance during the peak of the season may be seen in Figure 2. The beach gear, setnets and traps, took a higher percentage of reds per

catch than the driftnet gear operating farther offshore; this fact is illustrated in Figure 2. The red salmon catch reached a peak in the setnet and trap fisheries first on July 16 and again, to a lesser degree, on July 22 with an average of 209 per setnet and 326 per trap on the 16th and 126 per setnet and 458 per trap on the 22nd. As expected, the driftnet red catch peaked earlier, being July 11, with an average of 345 fish per unit of gear. The total 14 samples constituted 35 percent of the driftnets registered, 40 percent of the setnets, and 21 percent of the traps, and indicated the following catch percentages for the entire Cook Inlet commercial fishery:

<u>ALL SALMON</u>	<u>Driftnets</u>	<u>Setnets</u>	<u>Traps</u>
Percent of catch	65.37	31.15	3.34
<u>RED SALMON</u>			
Percent of catch	42.96	46.38	9.66

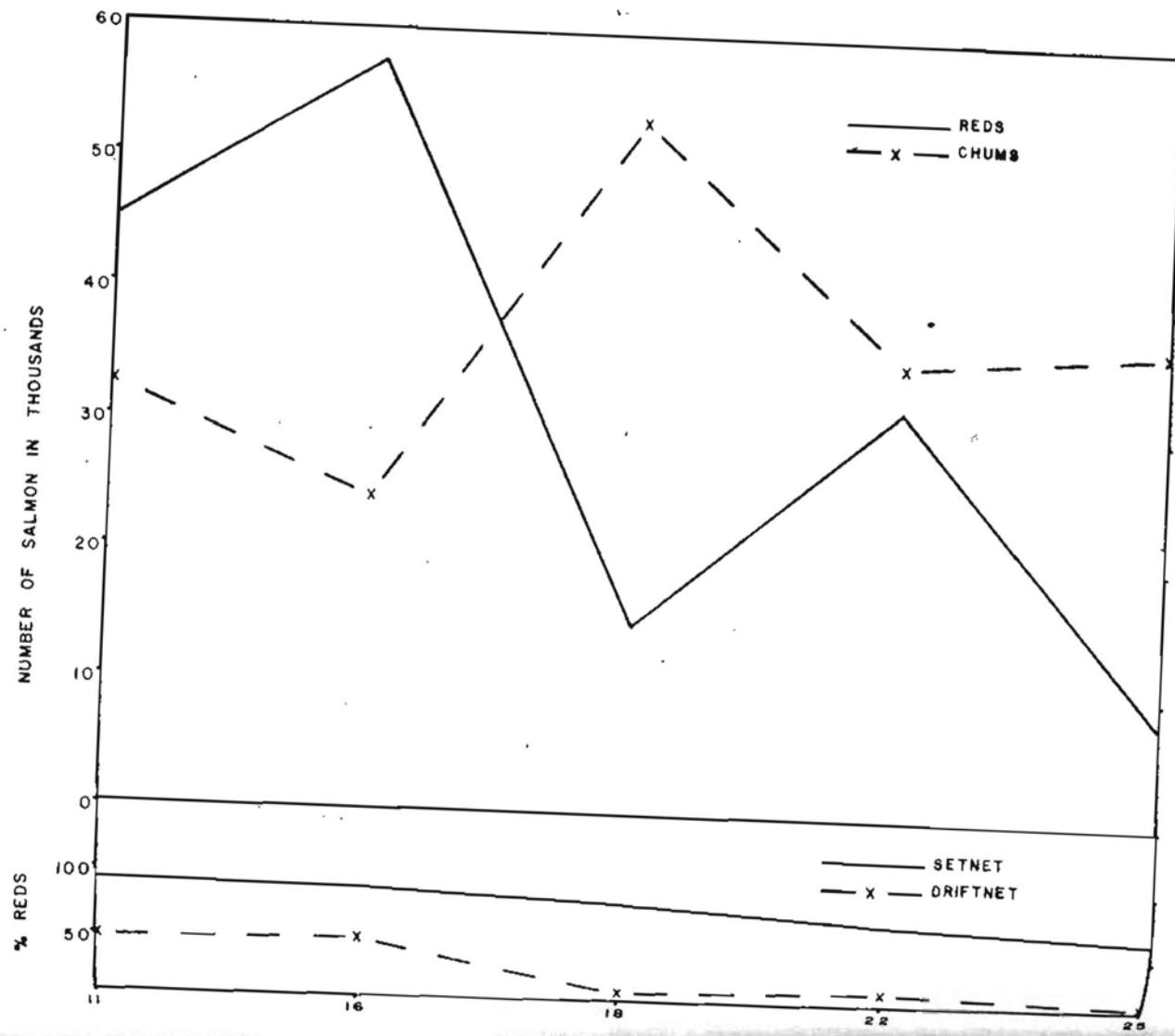
This year's highest recorded chum salmon pack accounted for the variation in driftnet catch, for chums are primarily offshore or mid-Inlet migrants.

Assuming the sampling methods used this season obtained a positive correlation with the Statistical Unit's overall catch analysis, next year all Cook Inlet operators will be supplied with suitable forms to provide catch analyses by period, gear, and area during the fishing season.

Information thus supplied will be spot-checked by our samplers while visiting the various canneries.

FIGURE 2

KENAI SALMON LANDINGS JULY 11-25, 1957
RED AND CHUM LANDINGS, ALL TYPES OF GEAR
PERCENTAGE OF REDS IN SETNET AND DRIFTNET CATCHES



620

AVERAGE NUMBER OF SALMON PER 48/1# CASE*

ALASKA YEAR-ROUND CANNERRIES CO.

Kings	3.5
Reds	12.5
Pinks	21.5
Chums	10.5
Cohoess	13.5

LIBBY, McKNILL AND LIBBY

Kings	3.20
Reds	11.93
Pinks	19.83
Chums	10.76
Cohoess	10.70

* Based on reports received from the packing companies.

GEAR REGISTRATION

COOK INLET

1957

Gear registered to fish for red salmon in Cook Inlet (Figure 3) was used as the basis for the number of days of allowable fishing time per week. Upon completion of registration the number of gear units fishing were figured on the basis of a set gill net as a unit of one, a drift gill net as two, a hand trap as four and a pile trap as eight and a half.

Actual registration figures indicated that the amount of gear registered would allow only one and a half fishing days per week. It was then determined that the amount of gear actually fishing based on fish tickets and night counts would be used for the 1957 red salmon season.

Following is a summary of gear registered and gear actually fished.

GEAR REGISTERED

<u>Gear Type</u>	<u>Gear Registered</u>	<u>Gear Units^a</u>	<u>Computed Units</u>
Red Drift Net	337	2.0	674
Red Set Net	474	1.0	474
Pile Traps	8	8.5	68
Hand Traps	35	4.0	140
Total units of gear registered			1356

GEAR ACTUALLY FISHEDFish Ticket Tally

<u>Gear Type</u>	<u>Gear Fished</u>	<u>Gear Units^a</u>	<u>Computed Units</u>
Red Drift Net	284	2.0	568
Red Set Net	396	1.0	396
Pile Traps	8	8.5	68
Hand Traps	35	4.0	140
Total units of gear fished			1174

Gear units based on Section 109.2a of Regulatory Announcement 51, "Laws and Regulations for Protection of the Commercial Fisheries of Alaska", 1957.

FISHING GEAR*

COOK INLET

1957

<u>TYPE OF GEAR</u>	<u>UNITS**</u>	<u>FATHOMS</u>
Drift Gill Net		
8 $\frac{1}{2}$ " King	221	23,205
5 $\frac{1}{2}$ " Red	337	35,385
Set Gill Net***		
8 $\frac{1}{2}$ " King	374	56,100
5 $\frac{1}{2}$ " Red	474	71,100
Bench Seines	101	15,005
Traps		
Hand	35	
Pile	6	
Total	113	
Grab Nets	830	
Shrimp Nets	400	

*Relatively in error
C.A.W.*

* Data compiled in Anchorage from registration receipts.
 ** Units as tabulated above refer to one drift boat or one
 set net fisherman fishing in each case one legal limit
 of gear: 150 fathoms in the case of drift boats and 105
 fathoms for set nets. Bench seines average about 150
 fathoms in length.
 *** Unit is in shackles and may vary in length.

FISHING GEAR*

RESURRECTION BAY

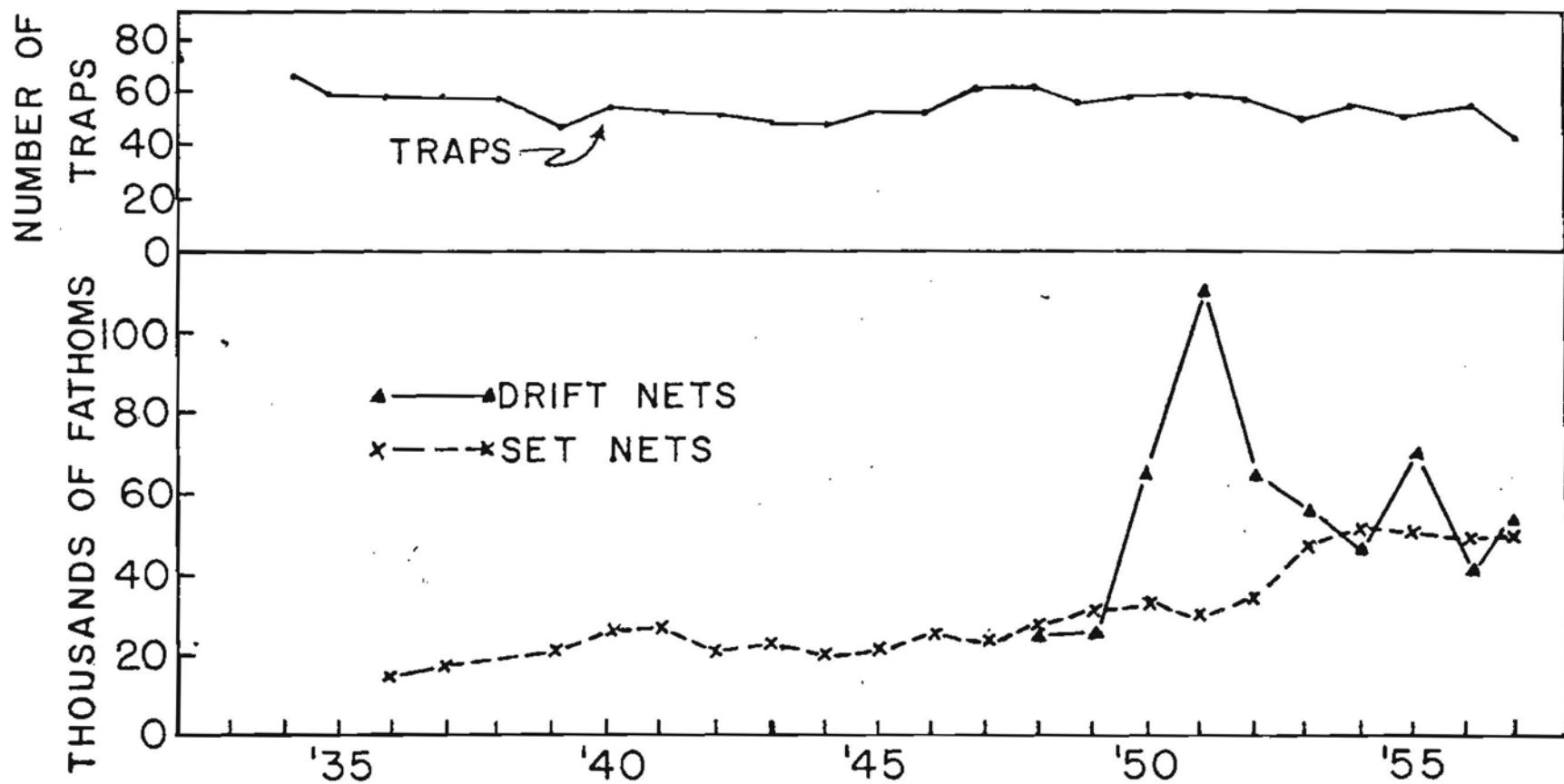
1957

<u>TYPE OF GEAR</u>	<u>UNITS**</u>	<u>FATHOMS</u>
Drift Gill Net		
Red	5	
King	1	750
Coho	7	150
		1050
Set Gill Net***		
Red	1	150
Beach Seine	3	360

* Data compiled in Anchorage from registration receipts.
 ** Units as tabulated above refer to one drift boat or one
 set net fisherman fishing in each case one legal limit
 of gear: 150 fathoms in the case of drift boats and 105
 fathoms for set nets. Beach seines average about 150
 fathoms in length.
 *** Unit is in shackles and may vary in length.

FIGURE 3

*COOK INLET REDS
GEAR OPERATED 1932-1957*



625

HERRING SURVEYS

1957

Due to a lack of flying time, herring surveys of local Kachemak Bay beaches were held to a minimum.

Surveys made during April indicated that herring were present, but that no spawning had taken place. While herring schools were not visible, the concentration of gulls and other aquatic waterfowl, especially eiders, indicated that schools were in the vicinity of Kasitsna Bay, Halibut Cove, Glacier Spit, Aurora Lagoon and Bear Cove.

Mrs. Elsa Pederson, a resident of Bear Cove, reported that on May 31 herring were very thick in the area between Bear Cove and Halibut Cove. Spawning was very light as late as June 11. When the peak of spawning took place is not known; apparently all spawning took place in offshore waters at some depth and was not visible.

FISH PRICES - 1957

Salmon1.

Kings	\$5.00 each
Reds	1.40 each
Pinks	.40 each
Chums	.50 each
Cohoes	1.00 each

1. Data furnished by Libby, McNeill and Libby and Alaska Year-Round Canneries Co.
2. Company fishermen received 1/3 less than above listed prices.

Halibut3.

Large	\$.13 per pound
Medium	.11 per pound
Chix	.09 per pound

3. Data furnished by Seldovia Bay Packing Co.

Photo # 7 - Beaver Dam

1957

An increasing beaver population coupled with a decreasing trapping effort have intensified the Cook Inlet stream clearance problem to a critical point. Excessive costs in time, manpower, and materials required by a large scale clearance program necessitated a concentration of clearance efforts upon only the major spawning streams supporting quite a sizeable salmon population. Throughout the season approximately fifty-seven beaver dams



Typical beaver dam blocking fish passage.

in fifteen creeks and rivers were made passable or removed during 1957 compared with seventy-three dams in seventeen creeks and rivers last year.

The clearance efforts were reduced to a crew of two men who were in the field from July 6 to July 31. In order to obtain the greatest coverage possible, the crew was frequently moved from one major problem area to another. This year's crew consisted of Jerry Chapman, a second

year man with clearance who served as crew leader, and Roger White. Once again Almer Nealon conducted a course in procedure and safety for the crew during the early season. Upon completion of the stream clearance work, both O'Gorman and White were transferred to the stream survey program as crew leaders.

Extremely low water conditions throughout most of the summer further aggravated the clearance problem by making nearly all beaver dams complete blocks to fish passage. As previously mentioned, beaver activity has generally increased throughout the Inlet, and in several instances dams were repaired or replaced in a matter of hours following the crew's departure.

Moose River, of the Kenai system, was again given thorough clearance in an attempt to ameliorate the future loss of spawning grounds through dams to be constructed in the Quartz Creek area. Reliable sources state that the present red run is a mere trickle of its former magnitude and surveys indicate that the system could support a very sizeable run. A special trapping season has been initiated to reduce the beaver population to a manageable state.

Major items of equipment used for stream clearance work were as follows: 60% ditching powder, electric and fuse caps, twist-type detonators, waterproof fuse, and lead wire.

Extensive photo coverage has been provided in past years and may be noted in previous annual reports.

Table 4 shows the 1957 clearance activities by individual streams.

TABLE 4
STREAM CLEARANCE ACTIVITIES
1957

STREAM OR RIVER	DRAINAGE	DATE	BEAVER DAMS		REMARKS
			Dammed	Opened By Hand	
Cottonwood Creek	Knik Arm	7/7 7/24	2 --	-- 1	Both active dams. Approximately 400 salmon below dam.
Fish Creek	Knik Arm	7/8	1	--	All activity in lower creek.
Hidden Creek	Kenai River	7/8	1	--	Dam about five feet high.
Jean Creek	Kenai River	7/8	1	1	Both active dams.
Packers Creek	Kalgin Island	7/9 - 7/10	--	2	Little beaver activity.
Moose River	Kenai River	7/14 - 7/15	4	5	Much activity in lower river.
Lake Creek	Little Susitna River	7/17	3	1	All dams active.
Fish Creek	Susitna River	7/14 - 7/24	12	9	Rods seen below 18th dam approximately 17 miles below Red Shirt Lakes.
Elling Creek	West Side	7/29 8/3	-- --	4 1	All active. 400 salmon below 1st dam. Survey crew. Same dam as above.

TABLE 4
STREAM CLEARANCE ACTIVITIES
1957

STREAM OR RIVER	DRAINAGE	DATE	BEAVER DAMS		REMARKS
			Dynamited	Opened By Hand	
Whiskey Lake Inlet	Chenega River	7/29	--	1	Active dam.
"T" Creek	Duncan Lake	8/21	--	1	Survey crew. Old
Upper Talachulitna Creek	Talachulitna River	8/26	--	1	Survey crew. Salmon below dam.
Trinity Lakes Connecting Streams	Talachulitna River	9/2 - 9/5	--	1 - 3	Survey crew. Much beaver activity.
Little Granite Creek	Matanuska River	9/4	--	3	All dams active. Approximately 150 m ³ sand and chum below last dam.
No Le Jo Creek	Red Shirt Lake	9/6	--	1	Survey crew. Salmon below dam.
TOTALS:	15		24	32 - 34	

FISH CREEK WEIR REPORT

1957

As has been the policy in the past, a weir was once again installed on Fish Creek located on Knik Arm in Upper Cook Inlet. "Failure" is the only term which can aptly be applied to the 1957 Fish Creek red salmon run. The final total of 15,630 rods is the lowest escapement on record and constitutes a mere 18 percent of the 1952 parent year run. Table 5 and Figure b illustrate the Fish Creek red salmon escapements from 1938 through 1957. The very poor red escapement appears to be typical of nearly all the west side spawning streams as indicated by stream surveys.

A panel-type weir was installed and fish-tight on July 4 and remained so until its removal on August 25. Schools of red salmon remained in the lower tidal areas of the creek until July 12 when they began their upstream movement. The daily counts remained relatively low throughout the season with only one count over 2,000 rods. Tables 6 and 7 give the daily counts of salmon passing through the weir and Figure 5 offers a comparison between the 1952 and 1957 daily counts. An average of 6.2 percent of the salmon were found to be net marked. This figure is considered an absolute minimum for often causes of fish passing over the counting board and poor visibility made net mark observation extremely difficult. The weir watchman in 1957 was Gene Didonato, a student in the School of Fisheries at the University of Washington.

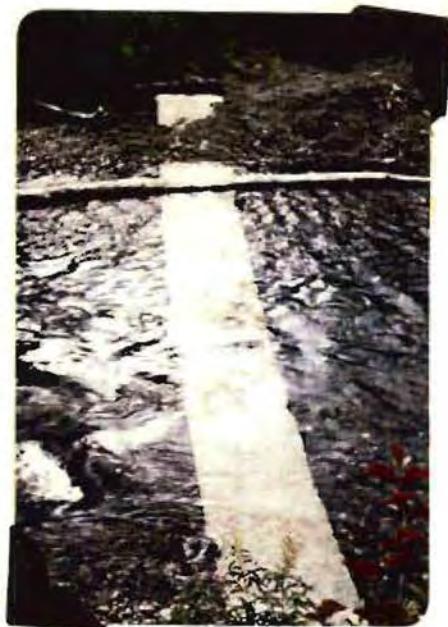
Very low water conditions were the rule throughout Cook Inlet during the past summer and Fish Creek was by no means an exception. Big Lake, the main tributary of Fish Creek, was approximately 18 inches below the mean low water level during the majority of the summer. Daily temperatures and water levels of the creek are presented in Tables 8 and 9. The water levels can be considered only in relative terms since there is no permanent depth gauge and the readings may vary according to the watchman's location and installation of the gauge.

An initial attempt was made this summer to correlate a count of salmon passing a particular point in the creek with the counts of salmon through the weir. A location on a fairly high bluff providing good visibility was selected and counts made during 15 minutes of every hour from 0600 to 2000 hours. It was hoped that in future years counting towers similar to the type used in the Bristol Bay area might be utilized in place of a weir. On July 24 a counting screen of galvanized wire mesh painted a light green was installed and the watchman provided with a pair of polaroid glasses; this combination increased the percentage of fish observed by nearly five percent.

Unfortunately, the bluff counting site was quite near the tidal area and the counts were greatly affected by surges of fish entering the creek during the peak of high tides. Also, the bluff counts were made downstream from the three major holding pools below the weir. Many times salmon entered the creek and remained in these pools for several days before continuing upstream through the weir and sometimes milled about in the pool awhile, finally returning downstream to tidewater. All the aforementioned factors caused the bluff count to weir count percentages to vary greatly. Tables 10 and 11 present the bluff and weir counts and percentages observed. We hope to attempt another bluff count - weir count experiment next season if a suitable counting site can be located.

It is interesting to note that only one positive tag identification was observed in Fish Creek this year although there were both an FBI tagging study and a trap delay tagging study conducted in the Inlet. A female red salmon bearing a green and yellow Petersen tag was twice observed in the lower creek on July 26. The tagged fish returned to tidewater and was never again observed. It is our belief that the tag was of the type being used at the Keweenaw River research tagging site during the past season.

FISH CREEK OPERATIONS 1957



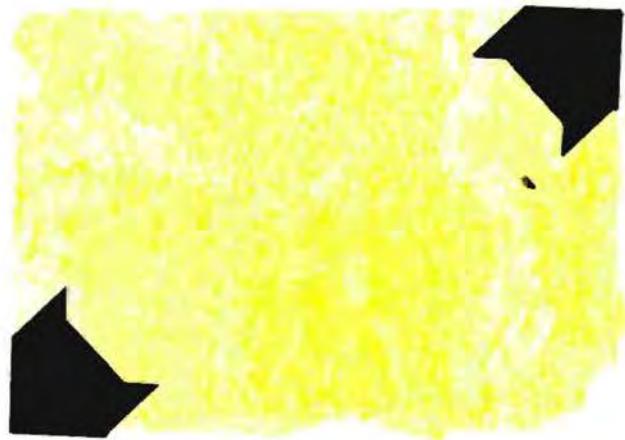
Salmon crossing counting screen.



Watchman Didonato and counting screen.



Weir in operation.



Salmon crossing weir counting board.

TABLE 5
FISH CREEK RED SALMON ESCAPEMENTS
1938 through 1957

<u>YEAR</u>	<u>RED SALMON COUNT</u>	<u>ESCAPEMENT RATING</u>
1938	182,463	Excellent
1939	116,558	Excellent
1940	305,962	Excellent
1941	55,077	Fair
1942	---	Poor
1943	---	Fair
1944	---	Good
1945	---	Poor
1946*	57,000	Fair
1947*	150,000	Excellent
1948*	150,000	Excellent
1949	68,240	Fair
1950	29,659	Poor
1951	34,704	Poor
1952	92,724	Good
1953	54,345	Fair
1954	23,287	Poor
1955	37,445	Poor
1956**	42,663	Poor
1957	15,630	Failure

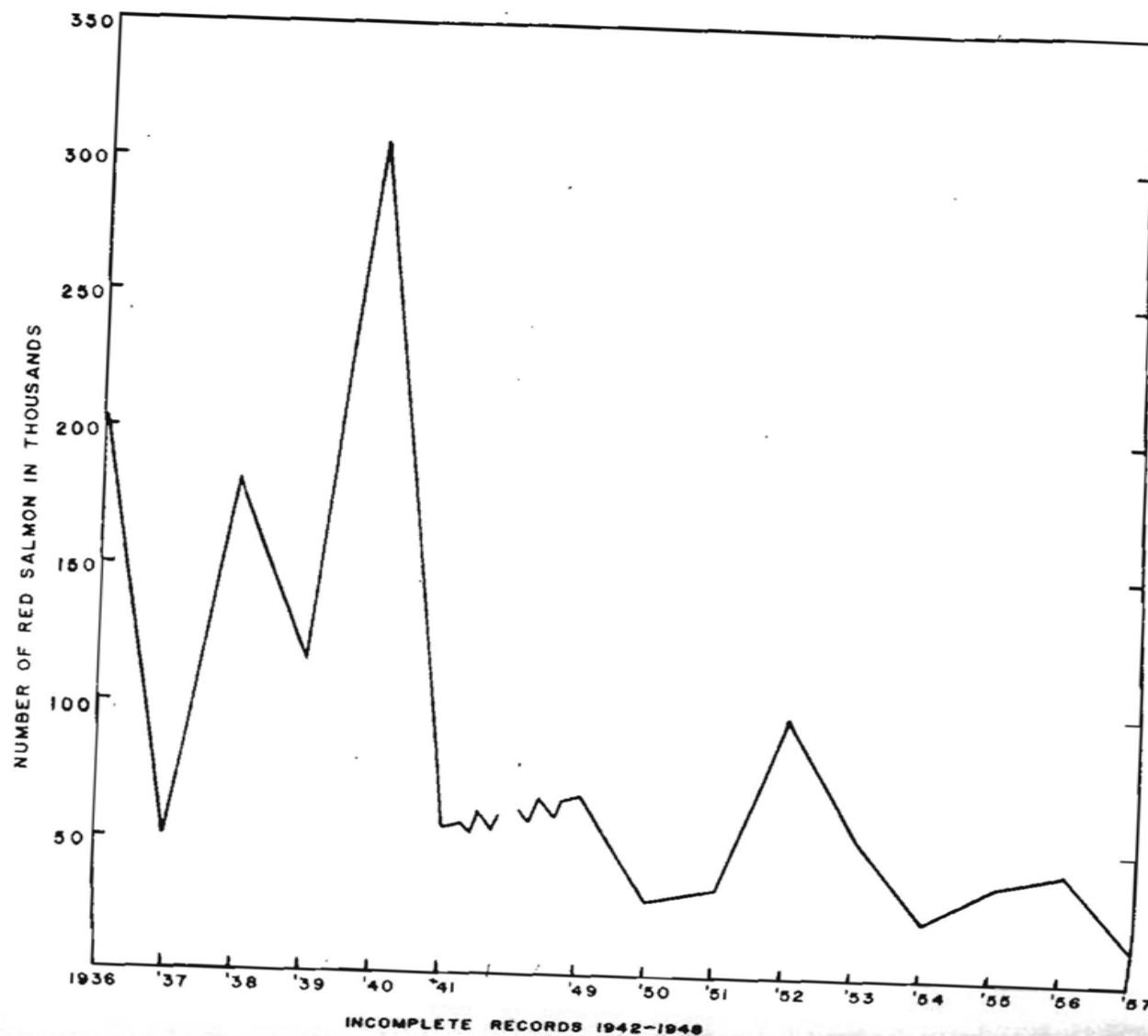
* Estimated Escapement - No Weir Installed

** Estimated Escapement - Weir Washed Out

FIGURE 4

FISH CREEK

RED SALMON COUNTS



056

TABLE 6
FISH CREEK WEIR COUNTS
JULY 1957

DATE	REDS	KINGS	PINKS	CHIN	SILVER	MACK
7/12	651	—	—	—	—	9
7/13	640	—	—	—	—	9
7/14	102	—	—	—	—	4
7/15	9	—	—	—	—	0
7/16	11	—	—	—	—	0
7/17	974	—	—	—	—	94
7/18	1092	—	—	—	—	96
7/19	981	—	—	—	—	91
7/20	762	1	—	—	—	72
7/21	293	—	—	—	—	19
7/22	885	—	—	—	—	78
7/23	202	—	—	—	—	20
7/24	309	—	—	—	—	36
7/25	271	—	—	—	—	29
7/26	2154	—	—	—	—	116
7/27	665	—	—	—	—	27
7/28	688	—	—	—	—	30
7/29	821	—	—	—	—	94
7/30	674	1	—	—	—	90
7/31	459	—	—	—	—	47

TABLE 7
FISH CREEK WEIR COUNTS
AUGUST 1957

LATE	REDG	KINGS	FINES	CHUMS	SILVERS	NET MARKS
8/1	755	—	—	—	2	75
8/2	527	—	—	—	12	76
8/3	350	—	—	—	17	59
8/4	233	—	—	—	7	35
8/5	237	—	—	—	9	30
8/6	85	—	—	—	5	10
8/7	89	—	—	—	10	16
8/8	103	—	—	—	7	9
8/9	82	—	—	—	6	9
8/10	6	—	—	—	—	10
8/11	6	—	—	—	1	11
8/12	69	—	—	—	6	6
8/13	44	—	—	—	2	26
8/14	29	—	—	—	2	0
8/15	120	—	—	—	9	0
8/16	20	—	—	—	5	0
8/17	—	—	—	—	1	0
8/18	6	—	—	—	1	0
8/19	217	—	—	—	72	15
8/20	111	—	—	—	30	**
8/21	62	—	—	—	49	6
8/22	41	—	—	—	87	**
8/23	3	—	—	—	2	0
8/24	4	—	—	—	—	0
8/25	2	—	—	—	—	0
TOTALS FOR JULY & AUG.	15630	1	0	0	346	1290

* 24 Hour Counts
** No Net Marks Recorded

FIGURE 5
FISH CREEK RED SALMON COUNTS 1952 AND 1957

SMOOTHED BY THREES

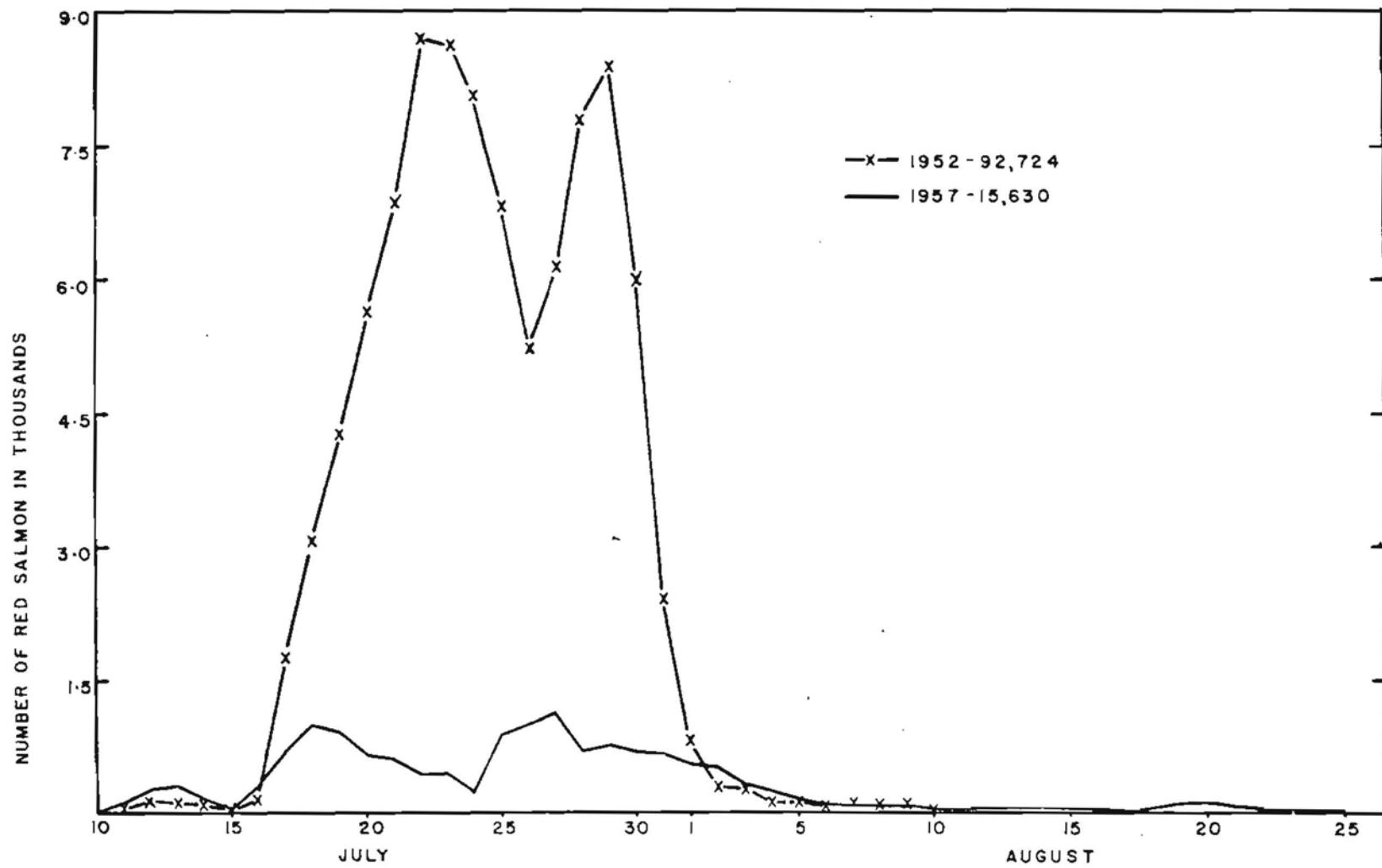


TABLE 8
FISH CREEK TEMPERATURES AND DEPTHS
JULY 1957

TIME	TEMPERATURE						DEPTH		
	0600		1200		1800		0600	1200	1800
	AIR	WATER	AIR	WATER	AIR	WATER			
53.0	55.0	62.0	62.0	59.0	62.0	62.0	Not Installed		
55.0	59.0	66.0	61.0	63.0	62.0	62.0	1.52	1.52	1.52
56.0	59.0	60.0	60.0	61.5	61.5	61.5	1.50	1.50	1.50
56.0	60.0	63.0	62.0	66.0	65.0	65.0	1.50	1.50	1.50
58.5	60.5	68.0	68.5	71.0	68.0	68.0	1.48	1.48	1.48
58.0	63.5	71.0	67.0	71.0	70.0	70.0	1.48	1.48	1.48
60.0	64.0	65.0	67.0	67.0	67.0	67.0	1.47	1.47	1.47
55.0	62.0	65.0	67.0	70.0	69.0	69.0	1.44	1.44	1.44
55.0	64.0	67.5	68.0	69.0	70.0	70.0	1.44	1.44	1.44
60.0	64.5	71.5	69.0	75.0	71.0	71.0	1.46	1.46	1.46
56.5	65.0	70.0	69.0	65.5	68.0	68.0	1.44	1.44	1.44
61.0	64.0	67.0	66.0	64.0	66.0	66.0	1.44	1.44	1.44
56.0	62.0	69.0	64.0	59.0	63.0	63.0	1.44	1.44	1.44
56.0	61.0	58.0	61.0	55.0	61.0	61.0	1.45	1.47	1.48
52.0	58.0	60.5	59.5	59.0	61.0	61.0	1.52	1.52	1.52
53.0	58.5	66.0	63.0	64.0	64.0	64.0	1.52	1.50	1.50
55.0	61.0	68.0	65.0	63.0	65.0	65.0	1.48	1.48	1.48
56.0	62.0	61.0	61.0	61.0	63.0	63.0	1.52	1.52	1.54
55.0	61.0	65.0	63.0	61.0	64.0	64.0	1.52	1.52	1.50
57.5	61.0	65.0	63.0	63.0	67.0	67.0	1.48	1.50	1.52
56.0	62.0	56.0	62.0	59.0	62.5	62.5	1.56	1.56	1.56
53.0	59.0	60.0	61.0	59.0	62.0	62.0	1.64	1.62	1.62
42.0	56.0	64.0	60.0	64.0	63.5	63.5	1.60	1.60	1.60
48.0	57.0	69.0	63.0	63.0	65.0	65.0	1.60	1.60	1.58
57.0	60.0	67.0	63.5	63.0	66.5	66.5	1.58	1.60	1.58
58.0	61.0	71.0	65.0	66.0	68.0	68.0	1.58	1.58	1.56
51.0	62.0	70.0	66.0	65.0	68.0	68.0	1.54	1.52	1.52

TABLE 9
FISH CREEK TEMPERATURES AND DEPTHS
ADWLT 1957

MIS	TEMPERATURE						DEPTH			
	0600		1200		1800		0600	1200	1800	
	AIR	WATER	AIR	WATER	AIR	WATER				
54.5	62.0	70.5	65.0	63.0	66.5	66.5	1.52	1.52	1.52	
56.0	62.5	67.0	66.0	61.0	66.0	66.0	1.50	1.50	1.50	
50.5	61.0	62.0	63.0	67.0	65.0	65.0	1.50	1.50	1.48	
52.0	60.0	63.5	61.0	63.0	65.0	65.0	1.48	1.50	1.49	
56.5	63.5	62.0	64.5	60.0	63.5	63.5	1.47	1.48	1.48	
57.0	62.0	63.0	63.0	66.0	65.0	65.0	1.52	1.50	1.48	
49.0	60.0	68.0	65.0	64.0	66.0	66.0	1.47	1.47	1.47	
50.5	61.0	70.0	65.5	66.0	67.5	67.5	1.47	1.47	1.47	
58.0	63.0	75.0	66.5	66.0	68.5	68.5	1.46	1.46	1.46	
51.0	63.0	69.0	66.5	64.0	68.0	68.0	1.44	1.44	1.44	
58.0	63.0	72.0	66.5	65.5	68.0	68.0	1.44	1.44	1.44	
55.0	63.0	66.0	65.5	63.0	66.0	66.0	1.44	1.45	1.45	
57.0	62.5	64.5	66.0	61.0	65.5	65.5	1.46	1.48	1.46	
56.0	62.0	70.0	65.0	63.0	66.0	66.0	1.44	1.48	1.44	
59.5	63.5	72.0	68.0	66.0	68.5	68.5	1.46	1.46	1.46	
55.0	63.0	--	--	66.0	68.0	68.0	1.45	--	1.47	
53.0	62.0	62.5	65.0	65.0	64.0	64.0	1.47	1.46	1.44	
56.0	61.5	62.5	63.0	57.0	62.0	62.0	1.42	1.42	1.44	
52.0	59.0	Thermometer Broken						1.51	1.50	1.50
							1.47	1.52	1.53	
							1.53	1.56	1.55	
							1.53	1.52	1.51	
							1.51	1.50	1.55	
							1.51	1.50	1.48	
							1.51	1.53	1.54	

TABLE 10
FISH CREEK BLUFF AND WEIR COUNTS
JULY 1957

DATE	WEIR REHS	BLUFF REHS	PER CENT	WEIR COTOS	BLUFF COTOS	BLUFF UNIDENTIFIED	PER CENT
1/12	451	44	9.8	—	—	—	—
1/13	140	50	11.4	—	—	—	—
1/14	102	7	6.9	—	—	—	—
1/15	9	—	0.0	—	—	—	—
1/16	11	9	81.8	—	—	—	—
1/17	974	115	14.9	—	—	—	—
1/18	1092	176	16.1	—	—	—	—
1/19	981	166	16.9	—	—	—	—
1/20	762	49	6.4	—	—	—	—
1/21	293	9	3.1	—	—	—	—
1/22	585	60	6.8	—	—	—	—
1/23	202	88	43.6	—	—	—	—
1/24	309	60	19.4	Counting Screen Installed			
1/25	271	98	21.4	—	—	—	—
1/26	2154	311	14.4	—	—	—	—
1/27	665	179	26.9	—	—	—	—
1/28	638	373	54.2	—	—	—	—
1/29	821	77	9.4	1	—	—	0.0
1/30	874	223	25.5	2	—	—	0.0
1/31	459	38	8.3	2	—	1	50.0

Hour Counts

TABLE 11
FISH CREEK BLUFF AND WEIR COUNTS
AUGUST 1957

DATE	WEIR REDS	BLUFF REDS	PER CENT	WEIR CORIES	BLUFF CORIES	BLUFF UNIDENTIFIED	PER CENT
8/1	755	40	5.3	2	—	3	100.0
8/2	527	64	12.1	12	2	6	66.7
8/3	350	74	21.1	17	3	3	35.3
8/4	233	11	4.7	7	—	—	0.0
8/5	237	21	8.9	9	—	3	33.3
8/6	85	7	8.2	5	—	—	0.0
8/7	83	18	21.7	10	—	3	30.0
8/8	103	2	1.9	7	—	—	0.0
8/9	82	4	4.9	6	1	1	33.3
8/10	6	—	0.0	—	—	—	—
8/11	6	3	50.0	1	—	3	100.0
8/12	69	10	14.5	16	—	—	0.0
8/13	41	3	7.3	22	—	—	0.0
8/14	29	7	24.1	22	—	—	0.0
8/15	120	2	1.7	2	—	—	0.0
8/16**	20	—	—	2	—	—	0.0
8/17	—	—	—	—	—	—	—
8/18	6	2	33.3	1	—	—	0.0
8/19	217	34	15.7	71	8	14	31.0
8/20	111	26	23.4	39	2	—	6.7
8/21	62	—	0.0	49	2	2	8.2
8/22	41	7	17.1	87	16	—	18.4
8/23	3	—	0.0	2	—	—	0.0
8/24	—1	1	0.0	—	1	—	0.0
8/25	2	—	0.0	—	—	—	0.0
MEAN	15630	2158	15.7	346	35	39	21.4

* No Bluff Counts Made

	WEIR REDS	BLUFF REDS	PER CENT
More Counting Screen Installed	6482	836	12.9
Old Counting Screen Installed	9126	1622	17.8

COTTONWOOD CREEK WEIR REPORT

1957

The Bureau of Sportfish and Wildlife again established a weir on Cottonwood Creek in the Matanuska Valley during the 1957 season. The escapement of red salmon into the system was typically poor, being 1,576 compared with 3,858 in 1956. Until the removal of the weir on September 9, a total of 137 silver salmon passed the counting station compared with a total of 886 last season.

Daily counts of both upstream and downstream migrant salmon may be found in the final Cottonwood Creek report prepared by the Anchorage office of the Bureau of Sportfish and Wildlife.

ANCHOR RIVER WEIR REPORT

1957

Extensive damage and possible loss of a key fish producing stream of the southern Kenai Peninsula prompted an extensive study in 1957 by joint efforts of the Fish and Wildlife Service. The Bureau of Public Roads proposed construction of an addition to the Sterling Highway directly through the south fork of the Anchor River in such a manner as to be very deleterious to the fish stocks. Anchor River, primarily the south fork, produces approximately 50 percent of all salmon in the Lower Kenai Peninsula plus sizeable populations of steelhead and dolly varden.



Weir on north fork of Anchor River.

During the 1957 season, a thorough study was made through joint efforts of the Bureau of Commercial Fisheries, Bureau of Sportfish and Wildlife and the Office of River Basin Studies to accurately appraise the value of the Anchor River fish stocks. The final report is being published by the River Basin Studies staff. As a matter of information, the daily weir counts and estimates of steelhead, king salmon and coho salmon, extracted from the River Basin's report, are presented in Tables 12, 13 and 14.

TABLE 12
ANCHOR RIVER KING SALMON RUN BY DATE
1957

DATE	WEIR COUNT	CALCULATED PERCENT OF DAILY TOTAL	CALCULATED TOTAL
May 12			0
13			8
14			14
15			22
16	Weir		26
17			35
18	Net		42
19			49
20	Installed		57
21			63
22			70
23			76
24			84
25			90
26	16	17	106
27	21	18	117
28	19	16	106
29	7	16	40
30	5	16	28
31	5	23	22
June 1	131	95	138
2	32	36	89
3	22	36	61
4	13	36	36
5	21	36	56
6	6	37.5	11
7	4	36	17
8	27	36	3
9	5	36	75
10	4	36	14
11	5	36	11
12	5	36	14
13	14	36	39
14	25	41	61
15	14	95	15
16	18	36	50
17	9	36	25
18	3	36	8
19	5	56	9

TABLE 12
(Con't.)

DATE	WEIR COUNT	CALCULATED PERCENT		CALCULATED TOTAL
		OF DAILY TOTAL		
June 20	12	58		21
21	10	53		17
22	6	63		10
23	11	95		12
24	11	58		19
25	2	53		3
26	5	53		9
27	7	53		12
28	6	53		10
29	10	64.5		16
30	17	96		18
July 1	8	57		14
2	1	100		1
July 3 thru 26 - weir in continuous operation:	92	100		92
TOTALS	632			2,086

Totals for period May 12 through 25 are estimates based on curve which in turn was derived from relationship between length of head and length of tail of king salmon runs as shown by 1954 commercial harvest. During period June 26 through July 1 weir was in operation only during a part of each day; daily totals during this period are based on four 2-hour counts establishing the relative proportion of daily total passing through the weir at any given hour. Figures do not include sport fishing catch, and are for South Fork only. Slightly more than 50 were counted through the North Fork Weir.

TABLE 13
ANCHOR RIVER COHO SALMON RUN BY DATE
1957

DATE	WEIR COUNTS	ESTIMATES
July 24	0	
25	1	
26	2	
27	0	
28	1	
29	1	
30	0	
31	2	
August 1	4	
2	4	
3	2	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	
11	13	
12	13	
13	2	
14	7	
15	3	
16	12	
17	10	
18	31	
19	23	
20	33	
21	21	
22	21	
23	38	
24	124	
25	75	80
26	34	
27	59	
28	82	
29	33	
30	86	
31	20	
September 1	53	48
2	7	+25
3	24	
	20	
	048	26

TABLE 13
(Con't.)

DATE	WEIR COUNTS	ESTIMATES
September	4	21
	5	22
	6	19
	7	17
	8	
	9	9
	10	19
	11	6
	12	15*
	13	
	14	
	15	
	16	
	17	
	18	1
	19	10*
	20	
	21	2
	22	
	23	
	24	
	25	
	26	
	27	
	28	
	29	
	30	
October	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	1
	8	0
	9	0

* Incomplete daily counts which exceeded the curve total.

Estimates made on days when weir was out of operation or in operation for only a portion of the day are based on curve established from full day counts. Figures are for South Fork only; approximately 35 were calculated to have passed through the North Fork weir.

TABLE 14
ANCHOR RIVER STEELHEAD RUN BY DATE
1957

DATE	WEIR COUNTS	ESTIMATES
August 15	0	
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
September 1	1	11
2	2	12
3	3	13
4	4	14
5	5	15
6	6	15
7	7	15
8	9	
9		
10		
11		
12		
13		
14		
15		
16		
17	6	16
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
	12	13
	5	12
		11
		10
		9

TABLE 1b
(Cont'd.)

DATE	WEIR COUNTS	ESTIMATES
September 28		8
29		8
30		7
October 1		7
2	11	
3	5	
4	5	
5	4	
6	2	
7	2	
8	0	
9	2	
10	2	
11	0	
12		2
13		1
14		1
15		1
16		0
17		1
18		0
19		1
TOTALS	186	187
GRANDE TOTAL		375 plus estimated 160 North Fork

Estimates are based on curve of actual counts. Figures do not include North Fork, as North Fork weir was removed before peak of run. It is estimated on the basis of spring post-spawning downstream counts, that the North Fork may carry as much as 30 percent of the total run, which would raise the total for the system (after subtracting the sport fishing catch) to about 535 fish.

COOK INLET STREAM AND LAKE SURVEYS AND ANALYSIS

1957

Ronald G. Naab

The Cook Inlet stream and lake survey program was conducted along similar lines, with some modifications, as the initial system established in 1952. Primary emphasis was placed on the major red salmon spawning areas with additional exploratory surveys included whenever time permitted. Figure 6 presents a comparison of the relative red salmon escapements in primary Cook Inlet spawning systems from 1952 through 1957. The data is based on counts made in selected survey areas with 1954 serving as the base year for comparison.

Consistent warm, dry weather lowered the water levels in streams and lakes throughout Cook Inlet to a dangerous point regarding spawning potentials. Many access streams to spawning areas and spawning streams themselves were found extremely low and, in one case, actually dry during the peak of the spawning period. The warm weather appears to be reflected by the spawning ground water temperatures which average slightly higher than those of last year. Lake and stream temperatures observed in 1957 are shown in Table 15.

Somewhat more extensive surveys were made this season in an attempt to maximize tag recoveries from the three tagging studies conducted in the Inlet which were: Fisheries Research Institute tagging program, FWS Management trap delay study, and FWS Research Kenai River study. The 1957 stream survey crews were made up of Jerry O'Gorman, Roger White, Tom Lawin, Roger Strand, and David Patrick, who was forced to return to the States in early August.

For the sake of conformity with the 1956 stream survey work, the Inlet was again divided into four districts. The districts and their geographical limits are as follows:

- (1) UPPER INLET - includes all watersheds on the east side of Cook Inlet except those of the lower Kenai Peninsula, but including the English Bay lake and stream systems. Included from Upper Inlet surveys and placed in the Lower Inlet are the following four king salmon streams: Anchor River, Stariski Creek, Deep Creek and Ninilchik River.
- (2) LOWER INLET - includes all watersheds in the lower Kenai Peninsula, including the four king salmon streams mentioned above.

- (3) WEST SIDE - includes all watersheds on the west side of Cook Inlet from Knik River in upper Knik Arm to the Douglas River in Keniauk Bay.
- (4) RESURRECTION BAY - includes all watersheds from Point Core to Cape Fairfield.

Survey data for individual streams and lakes in the above districts is presented in Tables 16 through 29.

UPPER INLET ANALYSIS

This vast general area embraces two of the largest and most consistent red salmon producing systems in Cook Inlet, which are the Kenai River and the Kaslof - Tustumena drainage. In addition to the Management surveys, the Kenai system was given a very thorough and extensive coverage by survey crews operating from the Research tagging site located on the lower river. As an integral part of the tagging study, nearly all tributaries of the Kenai were visited in order to recover tags with the species and numbers of spawning salmon also recorded. Individual stream and lake surveys by the Kenai Research crews are included in the survey tables previously mentioned.

- (A) RED SALMON ESCAPEMENTS - Over all, the red salmon escapements in the Upper Inlet area were poor indeed, although they cannot be considered complete failures. Further analyzed by individual watersheds we may state that the Kaslof - Tustumena drainage was seeded fairly well and the Kenai system was fair to poor. The remaining minor spawning areas were generally poor to complete failures.

One of the few bright spots was the excellent escapement into Upper Russian Creek of the Kenai River system. Existing knowledge indicates that these reds enter the river quite early and pass through the commercial fishery relatively unharvested, but receive considerable sport fishing effort. Several methods have been discussed to allow greater utilization of this particular race, but no satisfactory means has been found to date.

- (B) KING SALMON ESCAPEMENTS - Evaluation of king salmon escapements in the Cook Inlet area is an extremely difficult, if not impossible, task due to the glacial condition of the majority of the spawning streams. An indication of escapement may be derived from observation of the commercial fishery. During the

1957 king salmon season the bulk of the catch was in the Upper Inlet area, suggesting the possibility that the run was not subjected to the usual drift fishing pressure and a fair to good spawning may have resulted. Jones Creek, of the Kenai River drainage, was found through the efforts of the Kenai Research survey crews, to be a more important king stream than was previously supposed.

- (C) PINK SALMON ESCAPEMENTS - Typical odd year pink salmon escapements occurred throughout the Upper Inlet with very minor spawning concentrations observed.
- (D) CHINOOK SALMON ESCAPEMENTS - It is felt that chinook escapements were generally good throughout the Inlet, judging from the spawners observed and the magnitude of the run as shown by the commercial catch.
- (E) COHO SALMON ESCAPEMENTS - Coho escapements are quite difficult to evaluate since the run extends late in the year, often entering streams even after freeze up. Observations on both the spawning grounds and the fishery indicate a disappointingly small run over the entire Inlet and probably poor escapements.

LOWER INLET ANALYSIS

- (A) RED SALMON ESCAPEMENTS - To the best of our knowledge, the Lower Inlet district, as presently defined, does not contain any notable red salmon producing systems.
- (B) KING SALMON ESCAPEMENTS - Anchor River, Stariski Creek, Deep Creek and Ninilchik River are essentially the only king salmon streams in the Lower Inlet. Escapement to these streams must be rated as poor. A very heavy concentration of sport gear (principally snagging gear) on these systems took a high toll of potential spawners, both in actual fish caught and in crippling losses.
- (C) PINK SALMON ESCAPEMENTS - Bitter disappointment was felt as the 1957 pink salmon runs failed to come up to the high expectations inspired by the excellent parent year escapements in 1955. Catches and escapements were generally poor throughout the Lower Inlet district. The Port Dick area was especially disheartening considering the masses of spawners present in the

parent year and their comparative absence this season. In direct contrast, China Foot Stream, a very poor spawning area in Kachemak Bay, had a definite surplus of pinks and no doubt suffered from overseeding.

- (D) CHUM SALMON ESCAPEMENTS - The chum salmon escapement in the Lower Inlet area may be termed as fair to good. Additional harvesting of chums at Island Creek in Port Dick might have been advisable due to the possibility of overseeding; Port Dick Creek also had an excellent escapement, but insufficient to merit further harvesting. The stationing of the patrol vessel Grayling and several conscientious streamguards in the Outside District during the commercial fishery undoubtedly aided in obtaining the good escapements.
- (E) COHO SALMON ESCAPEMENTS - Northern Kachemak Bay streams and the four lower Kenai King salmon streams are the only principal coho producing areas of the Lower Inlet. Escapement of coho salmon to this district during 1957 was poor.

WEST SIDE ANALYSIS

A major change in the stream survey scheduling of the West Side drainage was necessitated by the abnormally high glacial run-off caused by the unusually warm, dry summer. Visibility in lakes and streams with glacial tributaries was limited to depths often less than two inches and observation of spawning salmon became nearly impossible. As a result, several previously established survey areas were eliminated from the 1957 schedule.

- (A) RED SALMON ESCAPEMENTS - The red salmon spawning areas of the West Side of Cook Inlet can logically be divided into three major systems: Knik Arm, with Fish and Cottonwood Creeks as the principal streams; the Susitna drainage, with the Susitna, Tontas, Skwentna, and Tallechulitna Rivers being the main systems; and the Lower West Side with the Saluga River, Kalgin Island, Elling Lake, Chenik River, McNeil River, and lesser streams included.
- (1) KNIK ARM - The Fish and Cottonwood Creek system were afforded extensive coverage to determine the applicability of the present survey areas which, incidentally, appear to be quite satisfactory. Fish Creek, typically weired and used as an indicator stream, had a complete failure in red salmon. The Bureau of Sportfish and Wildlife weir on Cottonwood Creek also revealed a very poor seeding into that system. Spawning redds were discovered further

up the Matanuska River system (Little Granite Creek) than had previously been known. Perhaps this system merits more investigation in future survey operations.

- (2) SUSITNA - As one of the consistently highest red salmon producing areas in the Inlet, the Susitna drainage received its poorest recorded escapement. Low water conditions were a dominant factor in this area and one major spawning stream (Talachalitna Creek) was actually dry during the peak of spawning. There is a possibility that the main red run moved into the spawning areas following late season freshets for one resident reported a "large" run entering Judd Lake after completion of the surveys.
- (3) LOWER WEST SIDE - This area is not a great producer of red salmon but the general escapement picture can be termed as fair to good. In particular, the Packers Lake system had a fair seeding; Milling Lake's run was fair to poor; Chenik was fair to poor; and Kikfik Creek, in Kachemak Bay, had a fair escapement.
- (B) KING SALMON ESCAPEMENTS - The Susitna drainage constitutes the principal king salmon producer of the West Side and its escapement must be estimated due to the prevailing glacial condition. As previously mentioned, there is a possibility that the 1957 king run eluded some fishing pressure and escapements may have been improved. Two Susitna tributaries (Indian and Portage Creeks) were discovered to be major king spawning areas and will be closely scrutinized next season in hopes of establishing index streams. Other West Side glacial streams known to support king salmon are: Little Susitna River, Beluga River, Theodore River, Drift River, Kustatan River, Katmai River, and Heirthar River.
- (C) PINK SALMON ESCAPEMENTS - Exceptionally light pink escapements occurred over most of the West Side systems, which is typical of the odd year pink cycle in Cook Inlet; the McNeil River system being the one exception in having a good escapement last season. It is not known if McNeil has a pink run during even years, for 1957 was the first year since 1949 that a stream-guard was stationed there throughout the season.
- (D) CHUM SALMON ESCAPEMENTS - Generally, chum salmon escapements were good over the entire West Side of the Inlet. Outstanding areas, in particular, were Polly Creek, Marsh Creek, and

McNeil River. The fine seeding of McNeil River can definitely be attributed to the diligence of the stream-guard present. Two attempts to rob the river of its spawners, as may have been the policy in the past, were thwarted by his efforts and probably many others discouraged by his presence.

- (E) CHINOOK SALMON ESCAPEMENTS - From all indications the chinook escapement on the West Side was poor, much as the rest of Cook Inlet.

RESURRECTION BAY ANALYSIS

Escapements of all salmon species in the Resurrection Bay district were poor with very few exceptions. A fair escapement of chum was noted in Fessina Creek and Nuka Island Creek had a fair to poor seeding of pink salmon. Red salmon were unable to enter Delight Lake due to low water; the outlet stream did not have enough volume and the stream filtered into the sand about one quarter of a mile above the high tide mark. The red escapement into Desire Lake was not adequate. High water and poor visibility during the majority of the spawning period hindered observation, but it is felt that overall escapements were poor.

FIGURE 6

*COOK INLET REDS
RELATIVE ESCAPEMENTS*

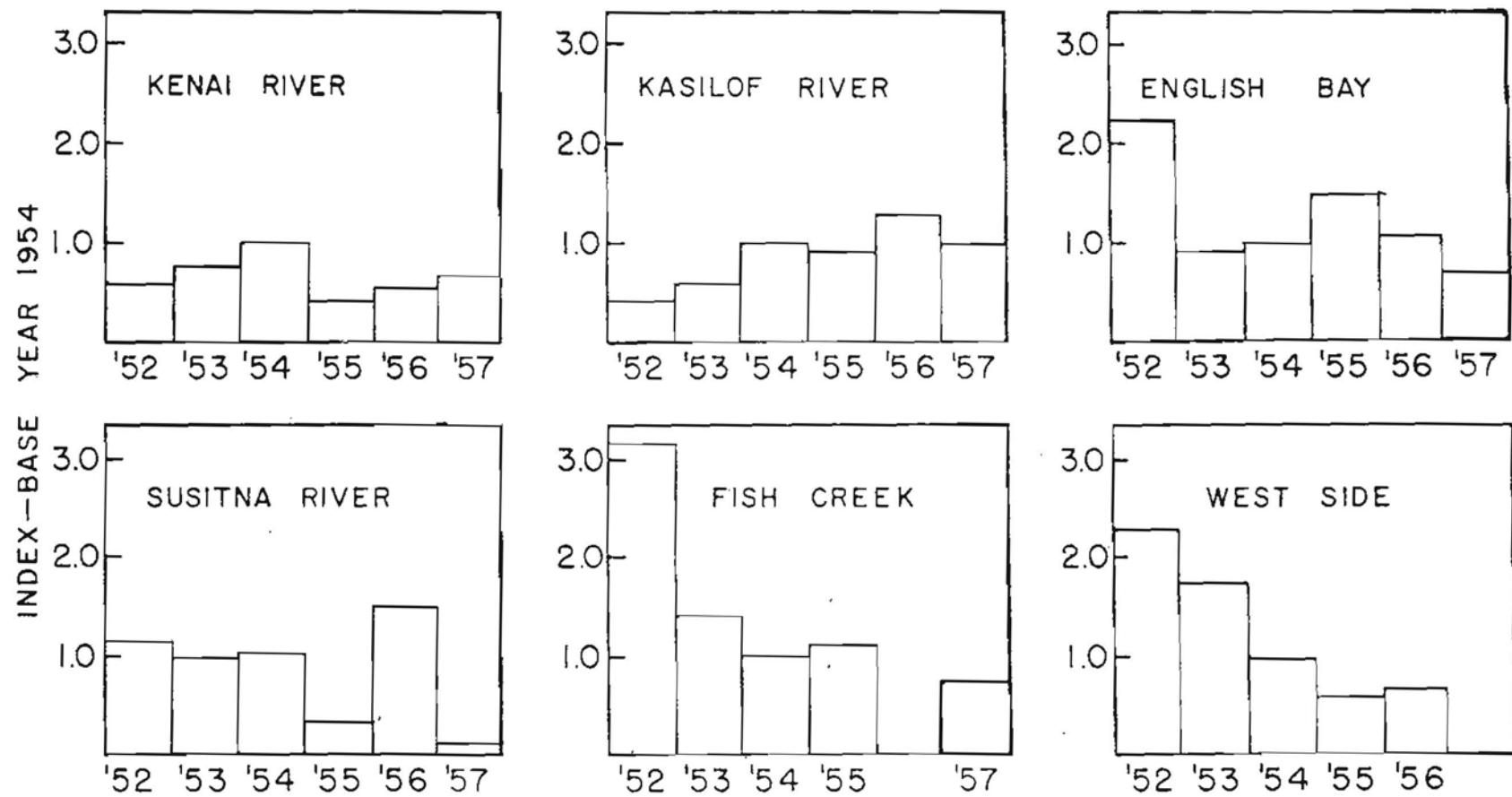


TABLE 15
COOK INLET
LAKE AND STREAM TEMPERATURES
1957

STREAM OR LAKE	WATER TEMPERATURE	AIR TEMPERATURE	TIME	DATE
<u>Turnagain Arm Drainage</u>				
Indian Creek	59.0	61.0	1400	8/15
Bird Creek	54.0			8/15
Cervon Lake	41.0			9/10
Deen Lake	60.0		1800	8/2
<u>Kenai River Drainage</u>				
Moose Creek	44.0	73.0	1700 (Upper Creek)	8/16
	55.0	72.0	1000 (Lower Creek)	8/16
Lower Russian River	61.0	76.0	1220	8/17
Upper Russian Lake	67.0	69.0		8/6
Upper Upper Russian Creek	49.0	60.0		8/6
Bishop Lake	64.0	67.0		8/19
<u>Kenai River Drainage</u>				
Nicola Creek	49.0	69.0	0635	8/10
Moose Creek	53.0	70.0	1130	8/3
Cliffhouse Creek	55.0	68.0	1800	8/3
Seepage Creek	63.0	78.0	1630	8/3
<u>English Bay System</u>				
Stream #3	49.0	75.0	1200	8/24
Lake #1	59.0	74.0	1000	8/25
<u>Idik Arm Drainage</u>				
Meadow Creek	52.0	68.0		8/14
Fish Creek	69.0	71.0		8/15
Wasilla Lake	71.0	79.0		8/15
Cottonwood Creek	71.0	72.0		8/16
Cottonwood Lake	73.0	72.0		8/16
Miklason Lake	70.0	64.0		8/17
Little Beaver Lake	65.0	54.0		8/20
Horseshoe Lake	65.0	64.0		8/21
Cloverleaf Lake	66.0	64.0		8/21
Bledgett Lake #1	64.0	65.0		8/23
Bledgett Lake #2	67.0			8/23
Bledgett Lake #3	65.0			8/23
Bledgett Lake #4	67.0			8/23
Bledgett Stream #1	63.0			8/23
Bledgett Stream #3	66.0			8/23

TABLE 15
(Con't.)

COOK INLET

LAKE AND STREAM TEMPERATURES

1957

STREAM OR LAKE	WATER TEMPERATURE	AIR TEMPERATURE	TIME	DATE
<u>Chitina River Drainage</u>				
Judd Lake	60.0			8/27
Talachulitna Creek	51.0	60.0		8/28
Talachulitna Lake	55.0			8/28
South Judd Springs	47.0			8/28
North Judd Springs	41.0			8/28
Talachulitna River	58.0	62.0		8/29
Lake Chelatna	59.0	61.0	0900	8/3
	59.0	60.0	1800	8/3
	57.0			9/4
Spring Creek	44.0	56.0		9/3
Switt Lake	59.0			9/6
Shockey Lake	60.0			9/7
Christmas Tree Creek	52.0			9/7
Huckleberry Creek	47.0			9/7
Tall Lake	60.0	62.0		9/1
Tall Lake Outlet	60.0			8/31
Old Shirt Lake	54.0	61.0	1100	9/6
Unity Lake	50.0	71.0	1300	9/4
No Stepan	53.0	51.0	1300	9/9
Siric Creek	52.0	51.0	1100	9/10
" Creek	52.0	65.0		8/21
<u>Kenai</u>				
Kopers Lake Outlet	64.5	65.0		8/2
N. Springs #1	53.0	60.0		8/3
Uly Creek	43.0	60.0	1100	9/1
Ring Creek	59.0		1230	8/3

TABLE 16
UPPER KENAI PENINSULA
STREAM AND LAKE SURVEYS

1957

MEAN ON LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Mim Creek	8/15	1 mile	0	0	0	
nd Creek	8/15	1 mile	6	0	1 dead pink	Glacial stream.
inn Lake	9/10	Entire	0	0	0	Glacial.
nnon River	9/10	1 1/2 miles	0	0	0	Glacial.
Wage Creek and Tributaries	8/16	Entire	0	0	0	
nde Creek	8/9	1 mile	0	0	0	Glacial stream.
ne Lake	8/2	Entire	630	132	0	No salmon in first 1/2 mile of outlet.
ne Creek	8/16	3 miles	928	352	0	Includes 75 in Carter Creek.
Russian River	8/17	3 1/2 miles	2,470	20	20 live kings	
	9/12	3 1/2 miles	5	1h	2 live kings	Turbidity high; visibility poor.

TABLE 16
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
Upper Russian River	8/7	1/2 mile	258	0	0	Additional 600 reds in pool 1/4 mile below count area.
Upper Russian Lake	8/6	Entire	568	12	0	Does not include 800 reds off mouth of Upper Upper Russian Creek.
Upper Russian Creek	8/6	2 miles	12,630	1,352	0	Includes 182 bear kills.
Upper Lake	8/19	Entire	0	0	0	
Upper Creek	8/19	1 mile	2	3	0	Very shallow.
River	7/15	12 miles	68	2	0	Reported by stream clearance crew.
River	9/6	Entire	0	0	0	Aerial survey.
<u>Bay System</u>						
Stream #1	8/25	Entire	39	0	89 live cohos 2 dead cohos	
Stream #2	8/24	Entire	631	32	0	
Stream #3	8/24	1/2 mile	256	6	0	
Wade #1	8/25	Entire	345	0	0	Visibility poor.
Wade #2	8/24	Entire	318	0	0	

TABLE 17
UPPER KENAI PENINSULA
STREAM AND LAKE SURVEYS 1957
LAKE TUSTUMENA DRAINAGE

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Mer Creek	8/7	4 miles	11,681	667	1 live coho 7 live pinks 14 dead pinks	Heavy bear predation.
	8/30	1 mile	75	*	0	*Dead too decomposed to count.
Mif House Creek	8/8	1/4 mile	28	5	0	
	8/29	1/4 mile	12	1	0	
Mo Creek	8/8	1 1/2 miles	3,751	119	39 live pinks 13 dead pinks	Peak of spawning.
	8/29	1 1/2 miles	106	*	0	*Dead too decomposed to count.
Mii Creek	8/10	1 mile	1,698	34	3 live pinks 9 dead pinks	
	8/29	1 mile	11	*	0	*Dead too decomposed to count.
Mo Creek	8/8	3/4 mile	1,469	49	0	
	8/29	3/4 mile	37	*	0	*Dead too decomposed to count.

TABLE 18
KEMAL RIVER DRAINAGE
STREAM AND LAKE SURVEYS 1957
KEMAL RESEARCH CREWS

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Mapine Creek	7/6	1/2 mile	0	0	0	
	7/20	1/2 mile	0	0	0	
	8/10	1/2 mile	0	0	0	
	8/20	1/2 mile	0	0	0	
	8/23	1/2 mile	0	0	0	
Mow Creek	7/6	3/4 mile	0	0	0	Good spawning area first 1/6 mile.
	7/21	1 mile	0	0	0	
	8/9	1 mile	0	0	0	
	8/19	1 mile	0	0	0	
M Creek	7/6	1 mile	0	0	0	Good spawning gravel.
	7/21	1 mile	0	0	0	
	8/9	1 mile	0	0	0	
	8/19	1 mile	0	0	0	
M River	8/3	1 3/4 miles	0	0	0	Water very turbid.
	8/26	1 mile	0	0	0	
Mun Creek	6/25	1 1/2 miles	0	0	0	Poor visibility.
	7/5	1 1/2 miles	0	0	0	
	7/21	1 1/2 miles	0	0	0	One salmon observed by fisherman.
	8/4	1 1/2 miles	0	0	3 live kings 1 dead king	
	8/20	1 1/2 miles	168	7	5 kings	Estimated 300 reds.
	8/22	1 1/2 miles	202	1	4 live kings 3 dead kings	
	8/28	1 1/2 miles	47	" 36	6	
						Creek flooding, poor visibility.

TABLE 18
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			REDDS	ALIVE	DEAD	
West Creek	8/3	1/8 mile	0	0	0	
West Creek	7/6	3/4 mile	0	0	0	Poor visibility.
	7/21	3/4 mile	0	0	0	
	8/2	3/4 mile	0	0	3 kings	
	8/26	1/2 mile	0	0	8 live kings 3 dead kings	
Wilson Creek	7/7	1/2 mile	0	0	0	
	7/22	1 miles	0	0	0	
	8/21	1 miles	0	3	0	
	8/26	1/2 miles	0	11	0	
Will Creek	7/7	1/8 mile	0	0	0	Water very turbid.
	8/26	1/2 mile	0	0	0	
Carter Creek	6/24	3 miles	0	0	0	
	7/7	3 miles	0	0	0	
	7/22	3 miles	0	0	0	
	8/2	3 miles	762	14	1 chain	Many paired, 68 redds in Carter Creek. Spawning beginning.
	8/11	3 miles	1,303	186	0	
	8/16	2 miles	926	493	0	
	8/21	3 miles	222	759	0	
	8/31	2 miles	3	555	0	Late stages of spawning. Spawning finished.
W. Lake	6/24	1/4 mile	0	0	0	
	7/7	1/4 mile	0	0	0	
	7/22	1/4 mile	0	0	0	
	8/7	1/4 mile	265	0	0	Pairing observed. Digging redds.
	8/9	3/4 mile	328	0	0	

TABLE 18
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Red Lake (Con't.)	8/16	1/4 mile	423	4	0	
	8/19	1/4 mile	768	35	0	
	8/30	1/4 mile	171	368	0	Actively spawning. Peak over.
White Creek	8/17	1 1/8 miles	0	0	0	
Burts Creek	6/23	2 1/2 miles	0	0	0	
	7/8	2 1/2 miles	0	0	0	
	7/23	2 miles	0	0	14 kings	Off mouth of Crescent Creek.
	7/29	2 miles	34	0	20 kings	Some kings digging redds.
	8/18	2 1/2 miles	656	3	15 kings	Estimated 700 redds.
	8/18	2 1/2 miles	553	55	9 live kings 3 dead kings	
	8/21	2 1/2 miles	218	55	2 live kings 1 dead king 1 dead chum	Spawning.
Black Creek	8/11	2 miles	0	0	40 live kings 32 dead kings	
Russian River	6/11	3 1/2 miles	130	0	0	5 redds in sport take.
	7/8	3 1/2 miles	144	8	0	Reds within one mile of falls.
	7/19	3 1/2 miles	176	18	0	Estimated 225.
	7/29	3 1/2 miles	2,122	30	0	Estimated 4,000.
	8/1	3 1/2 miles	439	18	0	Estimated 600.
	8/10	3 1/2 miles	202	9	0	

TABLE 18
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
Lower Russian Lake	8/1	2 miles	100	0	0	Boat survey, poor visibility.
	8/10	2 1/2 miles	1	0	0	Boat survey.
Upper Russian River	8/12	2 1/2 miles	1,025	5	0	150 reds outside count area.
	9/3	1/2 mile	0	1	0	Poor visibility, glacial.
Upper Russian Lake	8/2	3 miles	100	0	0	Boat survey.
	8/14	3 miles	614	0	0	Boat survey.
Upper Upper Russian Creek	6/16	Entire	0	0	0	Aerial survey, U.S. Forest Service reports fish 5 miles below lake.
	7/3	Entire	1	0	0	200 - 300 reds off mouth.
	7/12	1 1/2 miles	85	1	0	500 off mouth. Estimated 200 around lake shore.
	7/23	1 1/2 miles	5,447	15	0	Some paired and digging redds.
	8/2	1 1/2 miles	10,500	221	0	Estimated 11,000; spawning starting.
	8/14	1 1/2 miles	5,145	5,000	0	Past spawning peak.
	9/4	1 1/2 miles	12	0	0	Water high and muddy.
	6/20	2 1/4 miles	0	0	0	
Creek	7/9	2 1/4 miles	1	2	0	
	7/16	2 miles	0	1	0	
	7/28	2 miles	0	0	0	
	8/8	2 miles	2	0	0	2 at lake outlet, 2 at road culvert.

TABLE 18
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			REDs	ALIVE	DEAD	
Min Lake	6/20	Entire		0	0	0
	7/9	Entire		0	0	0
	7/16	Entire		0	0	0
	7/26	Entire		0	0	0
	8/7	Entire		0	0	0
	8/22	Entire	24	0	0	Fish paired.
	8/31	Entire	46	0	0	Spawning in late stages
Min Creek	6/20	1 1/2 miles		0	0	0
	7/18	300 yards		40	0	0
	7/30	300 yards		50	1	0
	8/7	1 mile		2	0	0
	8/16	300 yards		100	0	0
	8/22	1 mile		7	0	0
	8/26	400 yards		30	1	Several Unidentified
	9/2	1 mile		30	2	Poor visibility. Paired and spawning beginning.
Min Lake	7/10	Entire		0	0	0
	7/16	Entire		0	0	0
	7/26	Entire		0	0	0
	8/7	Entire		0	0	0
	8/22	Entire		82	0	0
	9/2	Entire	1,637	1	0	Spawning, poor visibility.
Glacier Mts	8/16	100 yards		0	0	0
	8/29	100 yards		0	0	0
County	7/18	3/4 mile		0	0	0
	7/30	3/4 mile		0	0	0
	8/16	1 mile		0	0	0

TABLE 18
(Con't.)

RIVER OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
W. River	8/16	3 miles	0	0	0	Boat survey.
W. River	7/15	1 mile	3	0	0	Boat survey.
	7/28	1 mile	0	0	0	Boat survey.
	8/14	1 mile	0	0	0	Boat survey.
W. River	8/14	4 miles	0	0	7 pinks	Boat survey; good spawning area.
W. Creek	8/13	1 1/2 miles	0	0	0	
W. River	8/13	1 1/2 miles	0	0	5 pinks	

TABLE 19
LOWER KENAI PENINSULA
STREAM AND LAKE SURVEYS
1957

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Wet Creek	8/11	3/4 mile	2 live kings 1 dead king	
Lower River	8/11	1 mile	39 live cohoes	
Wet Creek	8/6	1/4 mile	Blank	Water too swift to allow counts.
Wet Creek	7/30	1 1/4 miles	Blank	Stream dry.
Island Creek	8/1	1 mile	3,150 live pinks	Not spawning.
Bay Creek	8/4	3/4 mile	100 live pinks 50 live chums 2 live cohoes	Fair spawning area, could support several thousand.
Bay Creek	8/4	1/2 mile	100 live pinks 300 live chums 2 live cohoes	
Wet Creek	8/4	1/2 mile	1,200 live pinks 400 live chums	Fair spawning area, very rocky.

TABLE 19
(Con't.)

SUMMARY OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Port Dick #5 Island Creek	7/27	1 mile	32,000 live chums	Very few dead.
	8/5	1 mile	40,000 live chums 50 live pinks	Several hundred dead.
	8/10	2 miles	40,000 live chums 1,000 live pinks 2 live ephes	Estimated total 50,000 chums.
Port Dick #6 Middle Creek	8/5	1/2 mile	2,100 live chums 11 live pinks	
Port Dick Creek #7	8/7	1 1/2 miles	340 live chums 100 live pinks	
Port Dick Creek #8	7/28	1 mile	19,000 chums 500 live pinks	Chums are 20% dead, 55% spawned, 25% fresh.
	8/6	1 mile	15,000 live chums 5,000 live pinks	Dead chums entire length of stream.
	8/12	1 mile	10,000 live chums 8,000 live pinks	Chums dying rapidly.
Port Chatham Lagoon	8/20	150 feet	7 live chums	Very poor spawning area.
Port Chatham Creek #12	8/20	200 yards	50 live pinks 9 live chums	About 200 pinks off mouth.
Port Chatham Creek #13	8/20	1/2 mile	100 live pinks 5 live chums	Water low.
Port Chatham Creek #13-a	8/20	1/2 mile	150 live pinks	Water low.

TABLE 19
(Con't.)

RIVER OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
English Bay Creek #14	8/21	1 mile	756 live chum 335 live pinks	Water low; about 200 dead.
English Bay Creek #14-1	8/21	1 mile	2,100 live chum	Water low; very few dead.
H. Graham Creek #16	8/25	1 mile	75 live pinks 50 live chum	Should support many thousand.
H. Graham Creek #16-1	8/25	1/2 mile	42 live pinks 3 live chum	
Maria River #17	8/22	1 1/2 miles	9,300 live pinks 30 live chum	600 dead pinks, 20 dead chum.
Dark Creek #18	8/23	1 mile	100 live pinks	Very good spawning area.
English Bay Creek #19	8/23	1 mile	Blank	3 dead pinks in tidewater; creek dry.
My Lagoon #20	8/24	1 mile	50 live pinks 10 live chum	Many dead fish and bones.
My Stream #21	8/24	1 mile	Blank	Swift glacial water.
Over #22	8/23	3/4 mile	16 live pinks	Poor spawning area.
My Stream #23	8/24	1 1/2 miles	2,400 live pinks 40 live chum	Very few dead fish.
Not Stream	8/24	150 yards	25,000 live pinks	Very poor spawning area.

TABLE 20
LOWER KENAI PENINSULA
AERIAL SURVEYS
1957

RIVER OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Mc Bay Creek	7/25	3/4 mile	1,500 live pinks	
Mud Creek	7/25	Entire	1,800 live chum	
Mile Creek	7/25	Entire	5,000 live chum	
Mc Dick Creek	7/25	1 mile	15,000 - 18,000 live chum	
	8/2	Entire	4,500 live pinks	
Mc River	7/25	2 miles	1,200 live chum	
	8/2	Entire	300 live pinks	
Mc Bay Creek #10	7/25	Mouth	4,500 live chum	
Mc Bay Creek #11	7/25	Mouth	Blank	
Matthew Creek	6/2	Entire	Blank	

TABLE 20
(Cont'd.)

MEAN ON LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
English Bay Creek #14-1	8/2	Entire	150 live charr	
English Bay Creek #14-2	8/2	Entire	75 - 100 live charr	
English Bay Creek	8/2	Entire	500 live reds	
Pt Graham Creek	8/2	Entire	200 live pinks 10 live charr	

TABLE 21
 LOWER KINAI PENINSULA
 STREAMWARD SURVEYS

1957

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Taylor Bay Creek #1	8/4		100 pinks 50 chums	
	8/9		250 pinks	
Taylor Bay Creek #2	8/4		100 pinks	
Taylor Bay Creek #3	8/4		1,200 pinks 400 chums	
	8/9		600 pinks	
Taylor Bay Creek #10	7/5		5,000 chums	Off mouth and in lower creek.
	7/10			Good run for one mile.
	8/6			Small school of pinks off mouth.
	8/10		2,400 pinks 18,500 chums	Run about over, water low.
	8/11			
Taylor Bay Creek #11	7/29			40 chums off mouth.
	8/4			3,000 pinks off mouth.
	8/11			5,000 pinks off mouth.
				No fish in creek as yet.
British Bay Creek #1	7/7 8/12	1/4 mile	Few chums 15 - 20 pinks 1,000 chums	Jumpers off mouth. 200 dead chums; water very low.

TABLE 21
(Cont'd.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
English Bay Creek #14a	7/12		12 chums	Jumpers off mouth. Water low.
	7/15	1 mile	2 chums	
	7/30	1 mile	1,000 chums	Some dead chums.
English Bay Stream #25	7/16			
	7/18			
	7/21			2,000 reds off mouth.
	7/23		20 pinks	4,000 mixed reds and pinks off mouth. 2,000 pinks off mouth.
Art Graham #16	8/7		19 chums 6 pinks	Pinks spawned out.
Art Graham #26-a	8/9		150 - 200 pinks	
Art Dick #5 Island Creek	7/2			Chums active in bay.
	7/7		100 chums	Net spawning.
	7/10		600 - 700 chums	
	7/14		2,000 chums	
	7/19		5,500 - 6,000 chums	
	7/22		5,000 - 6,000 chums	
	7/27		32,000 chums	Peak of spawning.
	8/3		40,000 chums	10,000 chums were fresh.
	8/10		1,000 pinks	3,000 additional chums.
	8/11		1,000 pinks	5,000 pinks off mouth.
	8/18		1,500 pinks	

TABLE 21
(con't.)

RIVER OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Mt Dick #6 Middle Creek	7/10		200 - 300 chums	
	7/14		500 chums	
	7/19		400 chums	
	7/23		700 chums	
	8/5		2,100 chums 11 pinks	Chums spawned out.
	8/12		60 pinks	
Mt Dick #8	7/20			Pinks off mouth.
	7/29		19,000 chums 500 pinks	Chums spawned out and dead.
	8/12		8,000 pinks	Not spawning.
	8/16		9,000 pinks	More pinks off mouth.
	8/19		9,000 pinks	Spawning beginning. All pinks in stream.
Mt Dick #4	7/3			
	8/14		700 chums	Chums in bay. 1,000 pinks off mouth. Chums spawned out. Creek is dry.
Klondike River #17	7/14			
	7/22		150 pinks } 123 chums }	Jumpers off mouth. 21 dead chums. 75 - 100 chums off mouth. Some pinks off mouth.
	7/26		1,550 pinks 120 chums	1,000 mixed pinks and chums off mouth.
	8/6		3,000 pinks	
My Lagoon River #20	7/5			Few chums in lagoon.
	7/7		50 chums	
	7/13		4,000 pinks	
	7/27		6,000 chums 6,000 pinks 40 chums	Rest of chums dead.
	8/6		6,000 pinks	Additional 400 pinks off mouth.

TABLE 21
(Cont'd.)

RIAN OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Willard Bay Creek	7/8		Blank	
# 24	7/14	1/2 mile	12 chum	
	7/15		50 chum	20 pinks off mouth.
	7/19		75 chum	No pinks in creek yet.
	7/21		100 chum	
	7/23		100 pinks	Entered on high tide.
	7/27		200 chum	Dogs spawning. Pinks entering constantly.
	7/28		1,500 pinks	
	7/30		2,000 pinks	Not paired off yet.
	8/3		2,500 pinks	Large school of pinks off mouth. 70 chum bear kills.
	8/6		3,000 - 4,000 pinks	Pinks spawning; chum dying.
	8/9		400 chum	Water low.
	8/10 - 8/14		6,000 pinks	Few pinks still moving in.

TABLE 22
 WEST SIDE COOK INLET
 STREAM AND LAKE SURVEYS 1957
 KNIK ARM DRAINAGE

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Mt Lake	8/22	Entire	36	0	0	Water very low.
Rd Creek	8/15	1/2 mile	6	0	0	No fish in 100 yard lagoon count area.
Wigett Lake #1	8/23	Entire	317	0	0	
Wigett Lake #2	8/23	Entire	846	25	0	
Wigett Lake #3	8/23	Entire	10	0	0	
Wigett Lake #4	8/23	Entire	1021	6	0	
<u>Meeting Streams</u>						
#1 to #2	8/23	Entire	76	0	0	
#2 to #3	8/23	Entire	55	1	0	
#3 to #4	8/23	Entire	136	4	0	
Lower Lake	8/20	Entire	0	1	0	
Up Lower Lake	8/20	Entire	0	0	0	
Upper Lake	8/21	Entire	0	0	0	

TABLE 22
(Cont'd.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
Wasilla Lake	8/15	Entire	1	0	0	
Otterwood Lake	8/16	Entire	36	0	0	
Otterwood Creek	8/16	200 yards	155	0	0	Wasilla Lake to Mudd Lake.
Mud Lake	8/16	Entire	90	0	0	
Wasilla Lake	8/17	Entire	8	0	0	
Wasilla Lake	8/17	Entire	48	0	0	
Water Creek	8/18	1 mile	956	44	0	Includes 56 live and 32 dead in 1/2 mile count area.
Apex Lake	8/19	Entire	0	0	0	
Mountain Lake	8/21	Entire	0	0	0	
Lower Slough	8/15	1/4 mile	0	0	0	
	8/26	1/4 mile	143	1	0	
Wasilla Granite Ranch	9/4	1 1/2 miles	89	16	61 live chains	Additional 25 dead rods and chains mixed. Opened 3 active beaver dams.

TABLE 23
 WEST SIDE COOK INLET
 STREAM AND LAKE SURVEYS 1957
 SUSHITNA RIVER DRAINAGE

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
N. Coalatna	8/4	Entire	194	2	0	Visibility poor.
	9/4	N.E. shore	0	0	0	Visibility poor.
Ning Creek	8/3	1/4 mile	54	0	0	Fish fresh.
	9/3	1/4 mile	69	2	0	Past peak of spawning.
Salalitna River	8/29	3 1/2 miles	139	8	2 live chum	Includes 5 bear kills.
Ning Creek	8/29	3/4 miles	1	0	6 live chum	
Lake	6/27	Entire	470	9	0	Includes 326 in count area and 100 off mouth of Telachulitna Creek.
Gold Springs	8/28	1/2 mile	57	19	0	Includes 13 bear kills.
Gold Springs	8/28	1/8 mile	0	0	0	Removed beaver dam, fish started up.
Gold Springs	8/28	1/2 mile	82	5	0	100 schooled off mouth.
Salalitna Creek	8/7	1/4 mile	256	8	0	Dry above 1/4 mile.
	8/28	3 1/2 miles	383	7	0	All dead bear kills.

TABLE 23
(Cont'd.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
Mesalitna Lake	8/28	Entire	6	0	0	
Lower Talashalitna Creek	8/28	1 1/2 miles	14	0	0	Removed large beaver dam.
Mill Lake	9/6	Entire	76	4	0	Lake very turbid.
Mill Creek	9/6	Entire	56	2	6 live echoes	
Minay Lake	9/7	Entire	6	0	0	
Minas Tree Creek	9/7	100 yards	7	0	0	
Middleberry Creek	9/7	1 mile	873	1	0	Includes Springs #1.
Middleberry Springs #2	9/7	Entire	0	0	0	
Middleberry Springs #3	9/7	Entire	0	0	0	
Mill Lake	9/1	Entire	0	0	0	Lake level low.
Mill Lake Outlet	8/31	1/2 mile	0	0	0	Water very low.
Old Shirt Lake	9/6	200 yards	132	12	0	

TABLE 23
(Con't.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
W. La Jo Creek	9/6	1 mile	14	1	0	Beaver dam 1/2 mile up.
Minity Lake and tributaries	5/2-5/5	Entire	417	6	0	Many beaver dams on connecting streams.
W. Stepen	9/9	3/4 miles	48	12	0	Survey count area. Does not include count area.
	9/9	Entire	36	55	0	
Ward Creek	9/10	2 miles	4	46	0	
T. Creek	8/21	1/2 mile	167	0	0	
Nason Lake	8/21	Entire	0	0	0	Glacial, salmon present

TABLE 24
 WEST SIDE COOK INLET
 AERIAL SURVEYS 1957
 SUSITNA RIVER DRAINAGE

STREAM OR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Idi Lake	8/7	Entire	500	0	0	
Upper Talashulitna Creek	8/7	Entire	0	0	0	Blocked by beaver dam.
Upper Talashulitna River	8/7	3 1/2 miles	250	0	2 live kings	
Minn Creek	8/20	6 1/4 miles	0	0	2 live kings 1000 dead kings	Survey should be made in late July.
Wrigg Creek	8/20	8 3/4 miles	0	0	350 dead kings	Poor visibility. Survey too late.

TABLE 25

WEST SIDE COOK INLET
STREAM AND LAKE SURVEYS

1957

FOR LAKE	DATE	DISTANCE SURVEYED	C O U N T S			REMARKS
			ALIVE	DEAD	OTHERS	
Lake	8/2	Entire	27	0	0	
Lake	8/2	Entire	5	0	0	
Wings #1	8/3	Entire	52	189	0	
Wings #2	8/3	Entire	0	0	0	
Wings #3	8/3	Entire	4	0	0	
Rock	9/1	1 mile	0	6	4046 live chum Some live cohos 8 dead chum 1 dead pink 1 dead coho	Resident claims good escapement.
Rock	8/3	1/4 mile	4	0	1 dead pink	100 unidentified salmon seen from air.
Lake	8/3	Entire	0	1	0	Fish still deep in lake.

TABLE 26
 WEST SIDE COOK INLET
 AERIAL SURVEYS
 1957

RIVER OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Mint Harriet Creek	8/20	1/4 mile	Blank	Jumpers off mouth.
Kiluga Lake Stream	8/7	3 miles	50 live rods 1 live king	
Seal Creek	8/7	Entire	6 live kings	
Hilling Lake	9/6	Entire	450 - 500 live rods	
Hilling Creek	8/20	Entire	300 - 500 mixed rods and cohos	All behind beaver dam at mouth.
	9/6	Entire	25 live cohos	
Hakers Lake	9/6	Entire	100 - 125 live rods	
Billy Creek	8/13	2 miles	5,000 - 6,000 live chums	
	8/20	3 miles	7,000 salmon	Species unknown.
Chesin River Slough	8/20	3/4 mile	75 - 80 salmon	Species unknown.

TABLE 26
(Cont.)

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
North Creek	8/20	1 mile	5,000 live and dead chum	
Lower Creek	8/20	Mouth	Silvers present	
Bisnia Creek	7/12	Entire	Blank	
Inday Creek	7/12	Entire	3,000 live chum	
Minidori Creek	7/12 8/20	2 miles Entire	300 live chum 500 coho	Schooled up.
Neil River	6/3 7/12 8/20	1/2 mile 3 miles 2 miles	Blank 35,000 - 40,000 live chum Silvers present	Jumpers off mouth. All below falls.
Wilk Creek	7/12	Entire	500 live reds	Includes lake.
Naishak River	8/20	10 miles	Dead chum	

TABLE 27
WEST SIDE COOK INLET
STREAMGUARD SURVEYS
1957

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Seluga River	7/20	Lower area		Good showing of reds.
Bremile Creek	7/16		175 reds	
Chinitna River	6/2		Blank	
	6/12			Fair run of kings.
	6/26			Many Arctic kings.
	7/12			Few silvers.
	7/13		200 reds	
	7/27	3 miles		100 salmon, mostly silvers.
	8/2	Lower area	130 cohos 70 pinks	
	8/14			Few fresh silvers.
Wash Creek (Chinitna Bay)	8/11	1 mile	30,000 chums	
Horage Creek (Iniskin Bay)	7/19			Chums off mouth.
	7/24		9 chums	200 chums off mouth.
	8/3		21 chums	Chums off mouth.
	8/8		25-30 chums	
Iniskin River	7/14		Blank	
	7/30			Few chums.
	8/12			Many chums.
	8/15			Many, many chums. Heavy bear predation.

TABLE 27
(Cont'd.)

MEAN OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Milk River	6/14	Rapids	Blank	No activity.
	6/22			School off mouth.
	6/26			Over 1,000 off mouth.
	6/27		25 reds	Following counts show
	6/29		64 reds	total number up rapids
	6/30		124 reds	to date; are considered
	7/4		434 reds	as absolute minimum
	7/6		761 reds	count.
	7/11		1071 reds	
	7/14		1296 reds	
	7/17		1481 reds	300 - 500 reds off mouth.
	7/20		1643 reds	200 reds off mouth.
	7/23		1795 reds	75 - 100 reds off mouth.
	7/24		1800 reds	25 reds off mouth.
Will River	6/26			
	7/5			Chum gathering at mouth.
	7/6	Below falls	20,000 chums	Thousands of chums.
	7/12			
	7/19			Thousands of chums; water
	7/29	Falls	5,000 live chums	very low.
	8/3	Falls	2,200 live chums	Many dead chums.
	8/8	Falls		Thousands of dead chums.
	8/11	Falls	50 live cohos	
	8/14			200 at upper falls; 2,000
	8/15	Falls		at lower falls.
	8/27	Lower river	200 live chums	25 live chums at upper
				falls; several hundred
				live chums at lower falls.
				Pinks starting good.
				Few live chums.
				No chums at falls.

TABLE 28

RESURRECTION BAY DISTRICT
STREAMWARD AND PATROLMAN SURVEYS
1957

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
M's Island Creek	7/6	Mouth	Blank	
	7/10	Mouth	Few pinks off mouth.	
	7/16	Bay	200 pinks.	
	7/19	Bay	500 - 1,000 pinks.	
	7/21	Bay	1,000 - 2,000 pinks.	
	8/3	Creek	3,000 pinks.	2,500 - 3,000 pinks off mouth.
	8/11	Creek	4,000 pinks.	
Mains Creek	8/15		13 live pinks.	
	8/21		1,500 live chum.	
	8/29		4 live pinks.	
			1,000 live chum.	
Birth of July Creek	8/15		Blank	
	8/25		Blank	
	8/29		Blank	Water high and muddy.
Resurrection River	8/2		Many pinks present.	Glacial
Rock Creek	9/5	1/4 mile	500 live cohos.	
Rock Creek	7/4		34 live reds.	All in one school.
	7/6		19 live reds.	Schooled under bridge.
	8/1			Red run over.
	8/13			Few fish seen.
Rock Creek	8/22		6 live cohos.	At mile 5 1/2, Seward Highway.
	9/6			No salmon observed.

TABLE 28
(Con't.)

RESURRECTION BAY DISTRICT
STREAMWARD AND PATHOLAR SURVEYS
1957

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS	REMARKS
Wise Creek	7/5	1 1/2 miles	91 live rods.	72 were above lake. Rod run over. Few fish seen. No salmon observed.
	8/1			
	8/13			
	9/4			

TABLE 29

RESURRECTION BAY DISTRICT
STREAM AND LAKE SURVEYS

1957

KINAI RESEARCH CRANES

STREAM OR LAKE	DATE	DISTANCE SURVEYED	COUNTS			REMARKS
			ALIVE	DEAD	OTHERS	
Mer Creek	6/25	1 mile	60	4	0	Estimated 90
	7/5	1 mile	0	0	0	
	7/20	1 mile	0	0	0	
	8/10	1 mile	0	0	0	
	8/24	1 mile	0	0	0	
Mer Lake	7/5	Entire	1	0	0	
	7/20	Entire	50	0	0	
	8/10	Entire	0	0	0	
June Creek	8/24	2 1/2 miles	0	0	0	

COOK INLET

SUBS PISH

1957

During the 1957 season three operators handled king crab. The vessel Alert worked in a combined operation with Alaska Fresh Company. Alaskan Seafoods Company changed hands and is now operated by Gene Browning. None of the companies made any significant changes in operation.



Interviewing king crab fishermen.

Ritter clams were dug for commercial purposes and sold as fresh clams on the Anchorage market. Apparently it was found that the venture was not profitable as digging was done on two tides only.

No razor clams were dug commercially in Cook Inlet, but during the spring tides several thousand bushels were taken from the Kenai Peninsula beaches between Cape Kasilof and Anchor River, and several hundred bushels were taken in the Polly Creek area by personal use diggers. The people of Ninilchik have shown some concern over the number of people now digging clams in that area. Present indications are that such digging is not harming the clam beds except in the waste of some immature clams by inexperienced diggers.

To date (December 1, 1957), the king crab take has been the lowest since crab commenced to be taken commercially - 687,471 pounds. Crabs were so scarce that Alaska Fresh sent the Alert to Kodiak to try to catch and/or purchase enough crabs to be canned to fill the orders they had received. It soon became evident that even this measure would not fill the gap. The plant

on Homer Spit was closed about September 10 and on November 20 all cannery machinery was moved to Kodiak. Mr. Browning closed his operation on September 1. Seldovia Bay, on the other hand, expects to remain open and to operate all winter. It is their intent to experiment with shrimp in addition to processing king crab.

A recommendation has been tentatively approved to continue the crab fishery beyond the normal January 1 closure. During the winter of 1956 - 1957 it was found that king crab remained available in good quantity and quality during the winter months. It was felt that the fishery should be allowed to take advantage of this and to close the fishery by field announcement during the molt period.

The establishment of a king crab research unit in Kachemak Bay will enable the Management Biologist to more intelligently manage this resource. Management to date has not been based on scientific fact, but rather on personal knowledge and what was thought to be the correct way to manage the fishery.

The crab research unit provided the following statistical information concerning king crab:

Estimated number of crabs taken	78,681
Estimated poundage of crabs taken	687,461
Number of crabs sold commercially	75,353
Value	\$53,027.90
Average weight per crab	8.8 pounds
Number of pots fished	6,693
Number of man days fished	1,954

KING CRAB

The following excerpts are from the log of the vessel Grayling. They give a fair picture of the crab situation during the fall when the take of crab should be at its best.

August 27

Covered the crab area, 18 boats fishing. They are using fresh bait. Flounders and scallops are used.

August 30

Checked crab area. Poor catches. Boats average 30 to 125 each.

September 3

Just a few boats came out. They pulled a few pots and got so few, 8 to 12 crabs to the boat, then went in.

September 6

Called on boats with Ree Baxter. Alert will soon go to Kodiak. Not enough crabs to keep going.

September 7

Covered crab area with outboard. Twenty-five boats out. Some pulled seven to eight pots with nothing in them. Bait was untouched. Jackie Joe made two eight minute drags and got 600 good crabs.

September 8

Jackie Joe went out and made one ten minute drag and brought in 600 good crabs.

September 9

Fishermen have been telling me stories about the Jackie Joe dragging five miles inside the line designated for the trawlers. Checked with Jackie Joe on this. His story doesn't lead to any likely violation. Informed him he would be checked on more closely from now on.

September 10

Covered crab area with outboard. Crabs are going for fresh bait but very poor results are being had with the frozen bait.

September 13

Three boats went out to pull pots. Had to come back without a catch. Too bad weather and big swell.

September 16

Checked boats for bait being used. The ones having best results all have fresh flounders and bull-heads. The bait is caught with small drags and small nets. Average catch now is 10 females to one male.

September 17

No boats out to pull pots.

September 18

Covered area with outboard. Fifty to sixty crabs to the boat today.

September 19

All the boats out pulling pots. Many pots were filled with females.

September 20

Boats are pulling pots and bringing them in until the high tides (23 footers) are over.

September 21

Eighteen boats out today. Average catch to the boat - 50.

September 22

Two-thirds of the pots have been taken in because of high tides.

September 23

Covered area. Counted 25 pots still fishing.

September 24

Boats taking pots out again. Four boats fished right on through all the tides.

September 25

Five boats fishing now. The males are showing a little increase since the high tides.

September 26

Called on the cannery and talked with fishermen. Bait is hard to get fresh here of late. Getting tom-cod, sculpins and flounders. Crab meat is very good and well filled out in the shell.

September 27

Several pots were set but too big a swell to pull any.

September 28

No boats out. Too big a swell to pull pots.

October 1

Big swell running. No pots pulled. More pots put out.

October 2

Night boats out fishing. Catches are 12 to 30 per boat.

October 6

No boats out. Lots of repair work going on. Bait fishing. Getting tom-cod.

October 7

Melody in with 800 crabs. A 20% gain for all boats. Rae Baxter aboard Jackie Joe while it makes a drag for shrimp. Got 75 crabs which were taken over by Baxter.

October 13

Too big a swell for pots to be lifted.

October 17

Twelve boats fishing. Twenty to forty crabs per boat.

October 26

Checked boats at cannery. Catches forty to eighty per boat.

November 1

Three boats in today with 12 to 14 crabs each. Their pots were all filled with female crabs.

November 2

Two boats came in with 20 crabs each. From 10 to 11 pots were picked from each boat. The pots were all loaded with females.

November 4

Called on all the boats in the Bay (lh). Almost all are waiting until the high tides are past before starting out again. They think the males might start showing up then.

November 7

The few fishermen who are still going out trying to find the male crabs are getting about 100% females. Anyplace in the Bay is the same - loaded with females. They are getting 80 females to the pot and in most cases not one male to the pot.

SHRIMP

The shrimp fishery is still a minor fishery and in the exploratory stage. One operator in Halibut Cove processed about 20,000 pounds* for local market sales. A considerable amount of exploratory otter trawl dragging was done during the winter of 1956 - 1957 to locate shrimp concentration areas where shrimp would be of marketable size. Several concentrations were found where the shrimp ran seven to the pound, heads on.

Seldovia Bay Packing Company is now planning a small operation during the winter of 1957 - 1958 and, if successful, will instigate a full fledged operation. The only limitation now appears to be an ample fresh water supply for winter time operation.

* Estimated production as no annual report available at this time.

ADDITIONAL OPENINGS - ADDITIONAL CLOSURES

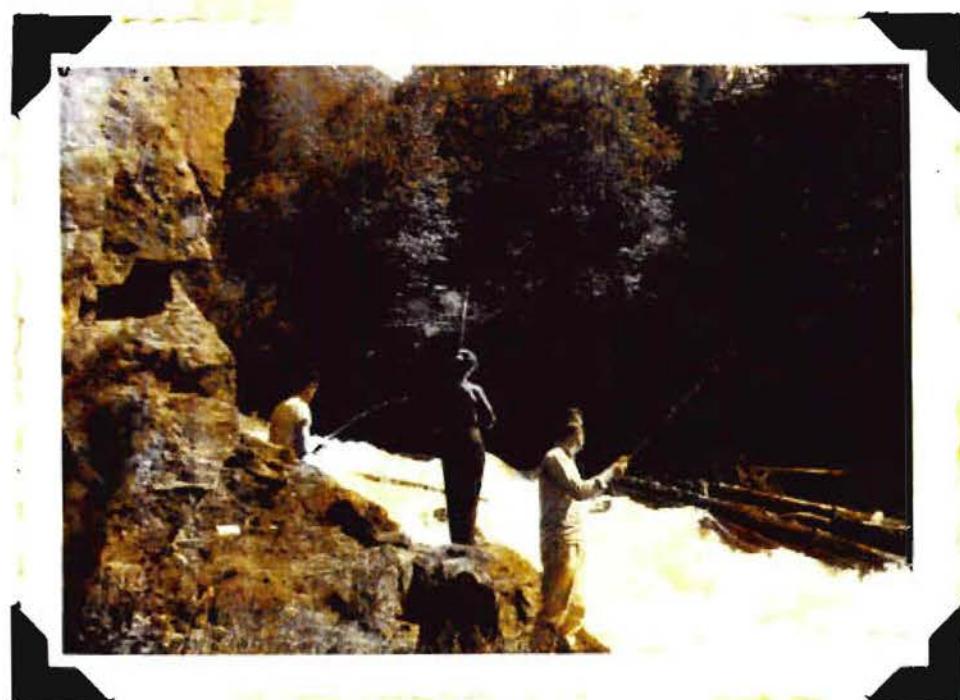
No additional time was allowed or even contemplated during the 1957 season. This office was not even requested to consider any extra allowable fishing time during the season.

No closures were requested. The pink salmon run was extremely poor in Port Dick and, had not so many beach seiners left early in the season, a request for an early closure would have been made.

A special closure of the Russian River was requested and granted covering the period August 26 to September 7. The closure was requested to save the approximately 1500 spawning red salmon in the lower Russian River from snagging and molesting by "sports" fishermen.



Typical intense sport fishing pressure on Russian River.



Sport fishing (primarily snanging) of salmon concentrations at Russian River falls.

COOK INLET
ENFORCEMENT PROGRAM
1957

The enforcement program for Cook Inlet was geared to an expected fair red salmon return in the Upper Inlet and a good to excellent pink salmon return in the Southern and Outside Districts.

The vessel Teal arrived in Seward May 12 at which time an agent was detailed aboard to check the stream markers from Seward to Seldovia. The vessel, from May 25 to June 5, was actively engaged in patrolling the king salmon drift fishery. During closed periods, stream markers were erected on the major West Side streams from Point Harriet north to Granite Point. The Teal departed Cook Inlet for Sand Point June 5 after completing a very satisfactory program.

The vessel Grayling was placed in active operation May 6 to commence her seasonal patrol activities in Cook Inlet and Resurrection Bay. Her first patrol was made to determine the amount of herring spawning taking place. Intermittent herring patrols were made until May 25 at which time the vessel was ordered to Kalgin Island to commence king salmon fishery patrol. The Grayling, in addition to patrol duty, did much of the work it had been expected the Widgeon would accomplish. This included towing skiffs to various stream-guard camps, delivering gas and oil to those camps occupied for king season, and transferring one streamguard from Jensen Slough to his new assignment at Iniskin Bay. During July and August the Grayling was assigned the patrol duties in the Outside District and in the Resurrection Bay area. This duty included riding the Seward Silver Salmon Derby committee on two different weekends.

The Grayling was assigned the duty of patrolling the king crab fishery and aiding the king crab research station during the latter part of August, September, October, and until the 7th of November at which time the vessel was decommissioned.

The power barge Widgeon arrived in Seward June 20, after a series of engine breakdowns. Due to continuing breakdowns and lack of a complete crew, the vessel was not fully utilized until July 10 at which time it commenced patrolling the drift boat fleet east of Kalgin Island. On July 25 the vessel was detailed to patrol the Outside District during the pink salmon fishery. During this period a carpenter was assigned aboard to build streamguard cabins at established camps.

Upon conclusion of the season the Widgeon picked up the streamguards, their gear, and boats. The men were taken to Anchorage by aircraft and the Widgeon brought all the gear and boats to Anchorage for overhaul and storage. The vessel left the District to return to Juneau August 23.

It had been felt that the addition of a large vessel would result in a better patrol and streamguard program. This, however, was not the case due to mechanical failures, and aircraft had to be called upon to haul many tons of freight, barrels of gas, and personnel. No doubt, if the vessel had been in top operating condition upon its arrival our expectations would have been met. By the time the vessel left here the crew appeared to have it operating to near peak capacity.

Aircraft, a Grumman Goose, was the main mode of transportation. With some exceptions, most of the streamguards and their gear were placed in the various camps and were serviced throughout the season by plane.

Enforcement patrol of the Cook Inlet - Resurrection Bay Area was held down in order to conserve enough air time for the 1958 spring operation. This restriction of patrol time no doubt is in part the cause of numerous reported illegal fishing operations taking place during closed periods and in closed areas. The streamguards were stationed in such a manner that only the most important streams or bays received constant protection during the season. Pilot Tom Wardleigh did an outstanding job throughout the season. In addition to his regular duties, he assisted in every way possible with the enforcement program.

The enforcement program was bogged down to some extent by one Commissioner's refusing to find obviously guilty fisherman guilty, or if found guilty he refused to fine them more than just enough to cover his Court costs. Fishermen could take long chances, and even when caught not be penalized. Several of the most flagrant violations were given to the District Attorney's Office to be handled in Third District Court; these cases have not been heard as yet.

Patrol of sport fishing streams was made as time allowed. One man was assigned to cover the Anchor River king salmon sport fishery prior to the opening of the red salmon season on July 1. One man was assigned the duty of patrolling the creeks in the Seward area in addition to patrolling Resurrection Bay. The man stationed at Kensi was assigned the additional duty of patrolling the Russian River on weekends. Attempting to have one man cover both the sport fishery and the commercial fishery is not successful, but at the present time is all we can afford.

Streamguards who had worked in Cook Inlet during the 1956 season were contacted in February to determine how many of them would be available for the 1957 season. Form 57's were secured for additional men to complete the streamguard

program. Those who appeared to be the most promising were written to inform them of the work opportunity. The personal program was completed by March. Men with previous experience in Cook Inlet were given the more difficult assignments; the assignments of new men were based on their experience as set forth in their job applications. With two exceptions, this method worked very well.

The majority of the men reported to Anchorage July 2 and 3. A group indoctrination was held to acquaint the men with the work at hand and to learn a little more of their capabilities. Slides and movies were used in addition to the actual demonstrations on the use of the equipment provided. After the men had been placed in their camps they were individually given information regarding the area for which they were responsible. It was found that, as a whole, too much had to be covered in too short a time and much of that which was said or demonstrated was not retained and had to be covered at least once more at a later date.

All streamguards were contacted at least once a week, either by plane or vessel. During these contacts they were given their mail, such supplies as they requested, their order of supplies to be delivered on the next visit was taken, and any questions which might have arisen since the previous visit were answered.

During and after the season ten more permanent type streamguard camps were constructed. These are based on eight by ten tent frames which had been constructed in the past. They are closed in by stiffening with two by fours and are covered with corrugated aluminum taken from the aircraft hangar roof at the time that the roof was rebuilt. These camps are a great improvement over the tent camps and give the men a more secure feeling, especially in areas where brown bear exist. Permanent camps are now located as follows:

Chuit River	Seldovia Bay
Jensen Slough	English Bay
Chinitna Bay	Dogfish Bay
Chenik River	Windy Bay
McNeil River	Island Creek in Port Dick
Mallard Bay	Nuka Island Creek
Tutka Bay	Delight Creek

Camps are to be constructed at Rocky River, Iniskin Bay, and Kenai in the future.

The placement of streamguards by area and date may be found in Table 30.

2007 CIVIL PENALTY VIOLATION VICTIM

NAME	OFFICE	DATE	OFFENSE	ADDRESS	PENALTY	COURT
ADAMS, Harley	FBI	7/15	FTC	Coho, AAA	\$50.00 (\$50.00 susp.)	X
ADAMSON, Dan	BS	6/25	FCA	Port Orches, AAA	\$200.00 (\$200.00 susp.)	SD
BENTON, William P.	SAC	7/8	FTC	Palmer, AAA	(Trial Pending)	AD
BURGESS, Wayne R.	IR	8/22	FCA	Spokane, AAA	\$100.00 (\$100.00 susp.)	P
BURGIO, Eugene	IR	7/12	FCA	St. Paul, AAA	\$10.00	A
CARPENTER, Robert L.	IR	7/9	FCA	Minot, AAA	\$105.00 (\$105.00 susp.)	A
CHAMBERS, Nathan	HQH	6/27	FCA	Anchorage, AAA	\$100.00 (\$100.00 susp.)	X
CHITWOOD, Joseph	IR	6/12	FCA	Portland Richardson	\$10.00	A
COOKLYN, Charles	SAC	8/2	FTB	Kenn., AAA	\$100.00 (\$100.00 susp.)	X
DUNHAM, Willard E.	BS	7/9	FTB	Seattle, AAA	\$250.00 30 days (30 days susp.)	S
EKLUND, Leslie	SAC	7/8	FTC	Seattle, Washington	(Trial Pending)	AD
OLIVER, Virgil P.	IR	6/22	OB	Blountoff, AAA	\$50.00 (\$50.00 susp.)	X
HORSON, Wesley	T	7/15	IC	Seattle, Washington	\$200.00 (\$150.00 susp.)	X
JOHNSON, Donald L.	SAC	8/2	FTC	Kenn., AAA	\$10.00	X

CONTINUED						
NAME	GEAR	DATE	OFFENSE	ADDRESS	PENALTY	COURT
MUNSON, James W.	DGN	7/23	R	Cordova, AAA	\$10.00	K
MINSTRA, Henry	SQN	7/30	FTC	Kenai, AAA	(Trial Pending)	AD
MUNSON, Ben	DGN	7/15	FTC	Seldovia, AAA	\$50.00 (\$50.00 susp.)	K
ARSON, John	BS	7/27	FCA	Seldovia, AAA	(Trial Pending)	AD
ME, George D.	BS	7/9	FCA	Seward, AAA	\$250.00 30 days (30 days susp.)	S
ALBRECHT, Tim Dan	BS	6/25	FCA	Port Graham, AAA	\$100.00 (\$50.00 susp.)	SE
WINTON, Sam	BS	7/27	FCA	Seldovia, AAA	(Trial Pending)	AD
HILLER, Fred	SQN	7/18	FCA	Kenai, AAA	\$200.00	A
HILLER, Wayne A.	HR	6/24	FCA	Fort Richardson	\$100.00 (\$50.00 susp.)	A
MURPHY, William E.	HR	7/31	FCA	Elmendorf AFH	(Referred to Military)	M
MONAG, William Walter	HR	7/28	FCA	Mt. View, AAA	\$25.00	A
BESOFF, Peter	BS	6/3	FCA	Seldovia, AAA	Not Guilty	SE
SOUTHARD, Dan	BS	7/9	FCA	Seward, AAA	\$500.00 30 days (30 days susp.)	S
SUTDAK, Antrill	BS	6/3	FCA	Seward, AAA	Not Guilty	SE
MURGAND, Kenneth	SQN	7/30	FTC	Kenai, AAA	(Trial Pending) Age 17	AD
WILSON, Kenneth David	BS	7/27	FCA	Seldovia, AAA	(Trial Pending) Age 15	AD

	DATE	OFFENSE	ADDRESS	PENALTY	COURT
WEERS, Wayne N.	SGN	8/8	POP Coho, AAA	Not Guilty	X
YOUNG, May Joyce	SGN	7/18	CL Seldovia, AAA	Not Guilty	X
ZILLERHOFF, John	LHM	7/23	R Cordova, AAA	\$10.00	X

ABBREVIATIONS USED

GSNL

- BS - Beach Sets
- F - Trap
- SGN - Set GILL Net
- LHM - Drift GILL Net
- RLM - Hand Rod

OFFICES

- POP - Fishing Closed Period
- POA - Fishing Closed Area
- IC - Improper Closure (Trap)
- R - Registration (Gear or License)
- OL - Over Limit
- FIS - Fishing Too Close to Other Game

COURTS

- A - Anchorage Commissioner
- AD - District Court
- M - Military Jurisdiction
- K - Kenn
- SP - Seldovia
- S - Seward
- H - Homer
- P - Palmer

TABLE 30
SEASONAL PERSONNEL
COOK INLET
1957

NAME	GRADE	ASSIGNMENT	DATES
WILEY, Leslie	A.S.S. 3	Port Dick	7/1 - 8/20
WIAN, Jimmy	A.S.S. 3	Seldovia	7/10 - 8/20
WESELL, Richard F.	A.S.S. 5	Anchorage	7/1 - 10/4
WILEY, Steve F.	A.S.S. 4	Nuka Island Chinit River	7/1 - 7/24 7/25 - 8/18
WONATO, Gene	A.S.S. 3	Fish Creek Weir	7/1 - 9/20
WIE, John P.	A.S.S. 5	Tutka Bay Kenai #2	6/20 - 6/31 7/1 - 9/6
WREACH, Franklin L.	A.S.S. 3	Windy Bay	7/1 - 8/17
WIT, Robert Joseph	A.S.S. 3	Kalgin Island	7/18 - 8/17
WIL, John K.	A.S.S. 5	Anchor River Weir	7/1 - 9/14
WILL, Ransom J.	A.S.S. 4	Grayling	6/1 - 9/2
WIS, J. Malcolm, Jr.	A.S.S. 3	Tutka Bay	7/1 - 8/17
WILSON, Kenneth R.	A.S.S. 3	Mallard Bay	7/1 - 8/18
WIST, Raymond E.	A.S.S. 3	Chenik River	7/1 - 8/18
WILLSTROM, Stuart	Senior Carpenter	Anchorage	7/1 - 10/3
WILLSTROM, Thomas D.	A.S.S. 3	Kenai #1 Stream Survey Crew	7/10 - 8/13 8/14 - 9/14
WILSON, Samuel E.	A.S.S. 4	Dogfish Bay	7/1 - 8/17

TABLE 30
(Con't.)

NAME	GRADE	ASSIGNMENT	DATES
MARX, Ivan L.	A.S.S. 5	McNeil River	6/3 - 8/29
MATHERS, Ray A.	A.S.S. 3	Rocky Bay	7/1 - 8/15
MILLER, Leo R.	A.S.S. 5	Chuit River Nuka Island	5/24 - 7/24 7/25 - 8/15
MONTGOMERY, Page E.	A.S.S. 3	Chinitna Bay	7/1 - 7/26
NORMAN, Jerry J.	A.S.S. 5	Stream Clearance Crew Stream Survey Crew	7/1 - 7/31 8/1 - 9/14
NUICK, David K.	A.S.S. 3	Cannery Detail Stream Survey Crew	7/1 - 7/31 8/1 - 8/14
PEARL, Perry W.	A.S.S. 3	Trap Crew	7/1 - 8/6
POLDS, Steve E.	A.S.S. 3	Delight Creek	7/1 - 8/6
REINSON, Jack G.	A.S.S. 3	Trap Crew	7/1 - 8/6
ROCK, Robert	A.S.S. 5	Trap Crew Leader	7/1 - 9/6
RICHARDSON, Dustin L.	A.S.S. 5	Jensen Slough Iniskin Bay	5/24 - 6/23 6/24 - 8/18
RICHARDSON, Gordon W.	A.S.S. 3	Seward	7/1 - 9/20
RICHARDSON, Wilber B.	A.S.S. 5	Kennicott	5/24 - 7/13
RIDGE, Rod H.	A.S.S. 4	English Bay	6/1 - 9/2
RIGER	A.S.S. 3	Cannery Detail Stream Survey Crew	7/1 - 7/31 8/1 - 9/14
RINGER T.	A.S.S. 4	Stream Clearance Crew Stream Survey Crew	7/1 - 7/31 8/1 - 9/14
RIVET, Charles	A.S.S. 7	Widgeson and Anchorage	5/1 - 10/4

RECOMMENDATIONS

The following are proposed regulation changes for 1958:

109.2 Open seasons

(a) North and North Central Districts

- (1) From 9 o'clock antemeridian June 2 to 9 o'clock antemeridian June 20 with gill nets only, of which no legal limit shall have more than 35 fathoms of mesh less than 8 1/2 inches stretched measure.
- (2) From 9 o'clock antemeridian June 30 to 9 o'clock postmeridian August 12.
- (3) From 9 o'clock antemeridian August 18 to 6 o'clock postmeridian September 20 with gill nets only.

(b) South and South Central Districts

- (1) From 9 o'clock antemeridian June 2 to 9 o'clock antemeridian June 20.
- (2) From 9 o'clock antemeridian June 30 to 9 o'clock postmeridian August 12.
- (3) From 9 o'clock antemeridian August 18 to 6 o'clock postmeridian September 20 with gill nets only.

(c) Outer District

- (1) From 9 o'clock antemeridian July 11 to 6 o'clock postmeridian July 19.

Justification

109.2(a)(1), 109.2(b)(1)

The king salmon run has been on a steady decline since the large pack of 1951 - 61,628 cases. The pack of 1957 of 12,549 1/2 cases is the smallest pack for which we have records. Our stream surveys of king salmon escapements are very poor at best. The fishermen on the West Side north of the West Foreland have stated that many kings moved by during the closed periods. Our meager surveys of the Susitna System are not conclusive enough to know what the over-all escapement was. The other West Side systems - Beluga, Theodore, McArthur, Kustatan, Katmai, and Drift Rivers - are so glacial that no count is possible. The East Side runs - Ninilchik River, Deep Creek, Starbuck Creek, and Anchor River - are down considerably from the runs reported in them a few years ago. Sport fishing has taken an added toll of kings over and above the commercial take.

It is my belief and recommendation that the length of the king season be curtailed in an attempt to rebuild this dwindling run and until we have enough information to scientifically set the proper length season.

109.2(b)(3)

I have recommended the date change here in an attempt to increase the commercial take of silver salmon. At the present time the fall season is not fully utilized and perhaps this season change might encourage one or more cannneries to stay open for the fall season.

It will also be noticed that the open seasons for both the South Central and Southern Districts now coincide. This will tend to avoid some confusion of opening and closing dates in addition to liberalizing the Southern District fall season.

109.2(c)(2)

The pink season has been deleted. It may be recalled that we requested a closure of the pink season for 1956 due to the expected weak pink return; instead a week's season was given. During that time very few pinks were taken and the majority were able to spawn. This odd year pink run is still in poor condition as the number of pinks spawning was, at best, only about one third the necessary number to maintain a healthy run.

It is my belief that with such a poor run expected that a 100 per cent escapement will be necessary to commence rebuilding the run. This is not taking into account any unforeseen actions which might affect survival at sea. If it is felt that a season should be granted, then I would recommend that it not exceed one week, commencing July 28.

109.2a Add Section (3)(c) for allowable fishing time after July 27. There was considerable confusion regarding the opening time for each weekly period after the July 27 closure for red salmon.

109.3 Delete the word drift. The marking of buoys would then apply to set nets as well as drift nets. It is common practice to mark buoy bags, but is not required. Occasionally an unmarked buoy is encountered fishing illegally and there is no way to tie it to any particular fisherman.

- 109.15e Corrections to be made
(a)(3) Correct 61 degrees 00 minutes 50 seconds north latitude to read 61 degrees 00 minutes 44 seconds north latitude.
(c)(1) Correct 150 degrees 16 minutes 30 seconds west longitude to read 150 degrees 26 minutes 30 seconds west longitude.
(c)(3) Correct 60 degrees 65 minutes 34 seconds north latitude to read 60 degrees 55 minutes 34 seconds north latitude.
- Correct 60 degrees 14 minutes 00 seconds north latitude to read 60 degrees 55 minutes 00 seconds north latitude.
- 109.15f Corrections to be made
(a)(1) Correct 151 degrees 44 minutes 37 seconds west longitude to read 151 degrees 43 minutes 59 seconds west longitude.
(a)(2) Correct 151 degrees 44 minutes 27 seconds west longitude to read 151 degrees 43 minutes 45 seconds west longitude.
- 109.15g Corrections to be made
(b)(2) Correct 151 degrees 22 minutes 19 seconds west longitude to read 151 degrees 22 minutes 50 seconds west longitude.

The following areas are additional to those set aside for setnetting in 1957:

Chinitna Bay

[Open to set nets from 59 degrees 52 minutes 29 seconds north latitude, 152 degrees 56 minutes 58 seconds west longitude] to [59 degrees 51 minutes 31 seconds north latitude, 153 degrees 06 minutes 57 seconds west longitude] and [from 59 degrees 49 minutes 27 seconds north latitude, 153 degrees 06 minutes 57 seconds west longitude] to [59 degrees 49 minutes 40 seconds north latitude, 153 degrees 00 minutes 15 seconds west longitude.]

Huddy River Area

Open to set nets from 60 degrees 01 minute 19 seconds north latitude, 152 degrees 36 minutes 15 seconds west longitude to 59 degrees 59 minutes 35 seconds north latitude, 152 degrees 40 minutes 00 seconds west longitude.

109.16 Delete Section (c) and add the following river names to Section (a):

Douglas River
Kamishak River
Strike Creek
McNeil River
Mukfik Creek
Chemik Creek
Anaktodesori Creek
Iniskin Bay

From 59 degrees 43 minutes 32 seconds north latitude,
153 degrees 26 minutes 50 seconds west longitude to
59 degrees 43 minutes 50 seconds north latitude,
153 degrees 22 minutes 22 seconds west longitude;
From 59 degrees 43 minutes 50 seconds north latitude,
153 degrees 22 minutes west longitude to
59 degrees 42 minutes 50 seconds north latitude,
153 degrees 22 minutes 45 seconds west longitude.

Chinitna Bay
From 59 degrees 51 minutes 31 seconds north latitude,
153 degrees 06 minutes 10 seconds west longitude to
59 degrees 49 minutes 27 seconds north latitude,
153 degrees 06 minutes 57 seconds west longitude.

Cottonwood Bay
Closed west of 153 degrees 39 minutes 00 seconds west
longitude.

109.16(c) Delete.

109.50a Delete sub-section (a).

Justification

The commercial fishermen are now using the guise of personal
use fishing during the fall season for illegal commercial
fishing. We had the unhappy experience just a few days ago
of picking up one of our known violators and having to release
him due to this particular Section as he pled personal use.
If a man is caught in a closed area with illegal gear or with
two limits of gear aboard, one of which is called personal
use, under the present regulation we cannot prosecute.

109.50(e) Add section requiring personal use nets to be registered and buoy
keys to be identified by initials of owner and F.W.S. Number.

109.50(e) (Continued from previous page)

Justification

All too frequently we pick up a personal use set net and are unable to identify the owner. Usually the net is a worthless rag and the owner would rather forfeit the net than face court. By registering each net, a more careful and effective enforcement program may be realized.

RECOMMENDATIONS

RESURRECTION BAY AREA

- 110.3 Open seasons. Fishing is prohibited except
- (a) Eastern District from 9 o'clock antemeridian July 31 to 6 o'clock postmeridian September 13.
 - (b) Western District
 - (1) From 9 o'clock antemeridian July 2 to 6 o'clock postmeridian July 19 and
 - (2) From 9 o'clock antemeridian July 24 to 6 o'clock postmeridian August 9.

- 110.3a Weekly Closed Period. The statutory weekly closed period is extended as follows in the Eastern and Western Districts:
From 9 o'clock antemeridian Saturday to 9 o'clock antemeridian Monday and from 9 o'clock antemeridian Wednesday to 9 o'clock antemeridian Thursday.

Justification

This will give the Resurrection Bay Area the same fishing days as are allowed in the Outer District of Cook Inlet. It imposes a mid-week closure for the first time. With Port Dick closed on Wednesday a portion of the fleet moved to the Western District and imposed an increased amount of fishing pressure on already over-fished areas.

The time of opening and closing then also becomes uniform in both Cook Inlet and Resurrection Bay Areas.

RECOMMENDATIONS

GENERAL REGULATIONS

I should like to recommend that a salmon sport fishing license be issued by the Bureau of Commercial Fisheries for the taking of salmon on rod and reel in either salt or fresh water. The fees derived from license sales should be used in the administration and enforcement of a sport fish program. Our present allotments do not allow more than a token enforcement program integrated with the commercial fisheries enforcement program.

It is also recommended that an anti-smagging regulation be enacted. Public opinion is now aroused to the point that such a law would be respected. It has the full backing of the sportsmen's groups and commercial fishermen.

ADJUSTMENT REGULATION

KING CRAB

I should like to recommend that Section 109.24a of the Alaska Commercial Fisheries Regulations be deleted. In its place I recommend a regulation whereby the king crab fishery is regulated by field announcement of openings and closures.

A regulation of that type is desirable at this time in order that the potential of a winter fishery might be known. Crab taken incidental to shrimp trawling last winter were found to be in excellent condition and should have been taken for market purposes. In addition, the winter movement of crabs tagged by our research would be better known if some sort of continuous fishing is maintained.

Our present knowledge of the molting period still needs some study during the late winter season. The female molt occurs during April and May and the male molt during June and probably part of July. It is possible to find non-shedders the year around.

We have a representative of the Service, Mr. Rae Baxter, living adjacent to the crab grounds the year around. He is sampling the fishing every day and would be in a position to advise the District Supervisor of the general picture of the crab fishery. If at any time it is found that the numbers of soft crabs is excessive, then the District Supervisor would be advised and a closure recommended.

At the present time a fairly new otter trawl and beam trawl fishery is developing for shrimp. Should it be found that these vessels are not returning king crab to the water or that there is excessive damage occurring to soft crab, then further recommendations will be in order.

John B. Sherry

October 16, 1957

RECOMMENDATION

RUSSIAN RIVER CLOSURE

The following is the text of a wire sent to John F. Sharrett from John S. Sherry on August 8, 1957, requesting closure of the Russian River.

"Request you consider a complete closure of the Russian River from its terminus with the Kenai River and including the two lakes and tributary streams. Present stream surveys indicate late red run low in abundance and do not feel they can stand the additional pressure to which they are now being subjected by sport gear. There have been many reports and complaints of waste of fish. The river is extremely low and many of the fish are now schooled below the falls and will probably be unable to move up to the lake unless we have considerable rain fall. It is in this area that most of the destruction is taking place."

RESEARCH PROJECTS

COOK INLET

1957

During the year several research projects have been carried on either by the Bureau of Commercial Fisheries or by contract with other organizations prepared to carry out fishery research. The following excerpts were taken from prepared proposals:

- I. "North Pacific Salmon Racial Sampling Program", A. E. Peterson, Pacific Salmon Investigations, U.S. Fish and Wildlife Service, Seattle, Washington, April 1957, p. 6-7.

"In Cook Inlet one man will be stationed at a cannery in Seldovia for the month of July. He will obtain 135 whole frozen chum and 135 whole frozen pinks for racial studies, shipping the fish to Seattle via Alaska Steam. He will also take measurements and scales from 200 reds, 200 chum and 200 pinks each week. In addition, he should attempt to get blood samples from 10-12 chum and 10-12 pinks, shipping the blood via air to Seattle.

"In late July and early August this man will collect 120 whole red salmon from Fish Creek and the same number from Cottonwood Creek, freezing the fish in the Fish and Farm Cold Storage Co., in Anchorage. These fish will be shipped south via Seward and Alaska Steam. In addition, at both Fish Creek and Cottonwood Creek a lot of 10-12 red salmon blood samples should be taken. Also, if possible about 235 downstream migrant red salmon should be collected from one of the rivers and preserved in formalin.

"It is contemplated that several hundred whole fresh salmon will be shipped from Bethel to Anchorage during the last week of June, and the man should be in the Anchorage area to haul these fish from the airport to commercial cold storage. His schedule for the Cook Inlet racial sampling will be approximately June 22-30, at Anchorage, July 1-26 at Seldovia and July 29 - August 5, at Anchorage. Jack Sherry of NCF will advise him and oversee his work."

- II. "Central Alaska Salmon Investigations - Methods of Counting Escapement of Cook Inlet Red Salmon Runs, Operating Plan for 1957 Field Season", Dr. Howard Tait, U.S. Fish and Wildlife Service, Juneau, Alaska, p. 1-3.

"The Cook Inlet red salmon fishery is supported by many relatively small runs of fish into several river systems. The major systems are the Kenai, the Kasilof, the Susitna and the Fish Creek-Cottonwood drainages. The red salmon runs to each of these river systems probably consist of many component groups or sub-races each of which is destined for a specific part of the river system spawning grounds. The development of high levels of production of Cook Inlet red salmon seems to depend upon contributions of young salmon from all of these grounds.

"At present there is so much gear fishing Cook Inlet stocks of red salmon that some of these groups or sub-races are probably being overfished in spite of limitations on the amount of gear that individual fishermen may fish, area restrictions, and weekly closed periods. Further restrictions in the form of extended closed periods are planned for the 1957 season if excessive amounts of gear are registered for fishing. This will have the effect of concentrating fishing effort in a short period of time and will probably subject some runs to excessive exploitation. Knowledge is urgently needed about the abundance and timing of runs and the relative catch and escapement in each river system in relation to weekly closed periods and to fishing intensity.

"The salmon streams of Cook Inlet are glacial in origin and extremely turbid and as a result, the usual methods for counting the escapement, such as weirs, counting towers and aerial surveys, are impractical. Escapement information is needed day by day while the fishery is operating so that rapid adjustments may be made in fishing regulations to allow the safe passage of adequate numbers of spawners. At present only meager information is available about the numbers of reds spawning in Cook Inlet streams, and these data are only available from a few clear headwater areas long after the fishery is over when it is too late to make adjustments in the current fishing season.

"In 1957 several methods of counting escapement will be tested and evaluated on the Kenai River system. Test-fishing operations will be conducted near the head of tidewater to obtain an index of escapement and to measure the effects of weekly closures and to help determine the rate of movement of rods through the fishery. Tagging at the test-fishing sites and recovery in the tributary streams will provide additional estimates of the escapement and its dispersion to the tributaries.

OBJECTIVES

- A. "Evaluate the use of large metal hoop nets as test-fishing gear in the Kenai River. Establish criteria for suitable test-fishing sites by studying the effects of tidal action, stream flow, turbidity and location with respect to shore, on the catch of adult red salmon. Estimate proportion of run captured in nets by tagging and determining the fraction of tagged fish in the tributaries."
- B. "Conduct test-fishing operations continuously throughout the fishing season to obtain daily a measure of the abundance of red salmon entering the river."
- C. "Identify sub-races destined for the various tributaries by tagging rods at the test-fishing site and subsequently recovering tags on the spawning grounds and by observing the peaks of spawning activity."
- D. "Conduct stream surveys of spawning in "index count" areas as done in previous years to provide continuous comparative data."
- E. "Provide recapture data on salmon tagged by the Fisheries Research Institute which enter the Kenai River."

Tagging Operations

"All red salmon taken from the metal hoop nets and set nets at each lift will be tagged with large, brightly colored disc tags and released uninjured as expeditiously as possible. A different color combination will be used each day. Fish will be cut from nets as necessary to avoid injury."

"Each fish will be measured (middle of eye to fork of tail), scales will be taken for age determination, and sex determined if possible. Fish previously tagged in Cook Inlet will be re-released after color combination of tag or serial number is recorded."

See following pages for photographs of 1957 tagging operations.

Tag Recovery and Stream Survey Operations

"All lakes and tributary streams of the Kenai River system will be systematically surveyed by air and by field crews walking the streams to:

1. Count the numbers of live and dead red salmon.
2. Determine peak of arrival and peak of spawning activity.
3. Measure the amount of potential spawning area actually utilized by spawners.
4. Recover tagged red salmon as they arrive on the spawning grounds.

"These surveys will be coordinated fully with Management and River Basin activities."

III. "Marine Fisheries Investigations - Operating Plan of the University of Southern California Contract on Crab Investigations", Donald Bright, University of Southern California, p. 1-2.

"The growth of the crab industry in Alaska has expanded to such an extent that a study of the crab populations and biology is necessary in order to maintain the production at a sustained level. The wide-spread nature of the industry has resulted in investigations along several separate fronts, and studies on King Crab are being conducted by the University of Southern California, the University of Washington, the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service. Co-ordination between these research activities will be maintained through an exchange of data as well as personal contact.

"In the Cook Inlet, crab studies are being conducted by the University of Southern California and the Fish and Wildlife Service. The University of Southern California investigations are being conducted for a minimum of two years with the initial effort to be concentrated in Kachemak Bay, which is the center of the Cook Inlet commercial crab fishery. For 1957, the University of Southern California contract objectives are as follows:



Brailling salmon from Fyke nets.



Tag application.



Red salmon bearing Petersen disc tag.

OBJECTIVES

1. "Determination of crab migrations and population intermingling.
2. "Collection of data on size-weight relationships.
3. Feeding habits and food of King Crab.
4. "Relationships of King Crab and Tanner Crab on fishing grounds.
5. "Analysis of total egg and larval production.
6. "Study of the cause, extent and distribution of 'rust-like' disease affecting the King Crab in Kachemak Bay.

SPECIFIC OPERATING PLANS AND METHODS

"The Fish and Wildlife Service laboratory at Kachemak Bay will serve as a base of operations. A medium crab vessel will be chartered for field investigations. Migrations and population intermingling of King Crab will be approached through crab tagging, initially in Kachemak Bay and later in other areas of Cook Inlet. A tag reward of \$1.00 will be offered. During the field season tags will be recovered from the commercial fishery by U. S. C. and FWS personnel. During the winter months and off-season period of the fishery, FWS personnel will be responsible for the collection of tags and length-weight data. During the tagging procedure itself, measurements of carapace length and width and total weight of individual crabs will be recorded. Food and feeding habits will be accomplished by examination of stomach contents of newly captured crab. Analysis of feeding habits and distribution of King Crab and Tanner Crab will provide material on extent of relationship or competition. Through egg counts and egg mortality studies, data on egg potential larval production will be assessed. Studies of individuals infected by the 'rust-like' disease will be made to determine the site on the crab most frequently infected and associated physical factors. An attempt will be made to isolate the causitive factor by plate culture of the disease."

- IV. "Marine Fisheries Investigations - 1957 Operating Plans, FWS
Crab Investigations--Cook Inlet", Dr. Norman Willimovsky, U.S.
Fish and Wildlife Service, Juneau, Alaska, p. 1.

"The crab industry in Alaska has expanded to such an extent that a study of the various crab populations and their biology is necessary in order to know how much expansion may occur without overexploitation. The widespread distribution of the fishery has resulted in crab investigations developing along several lines and in different regions. Studies on the king crab are being conducted by the Fish and Wildlife Service; and, under contracts with the Service, king crab studies are also being conducted by the University of Southern California, the University of Washington, and the Alaska Department of Fish and Game. Coordination of the contracts of the various agencies is accomplished by the Service.

"In Cook Inlet, crab studies are being conducted by the University of Southern California and the Fish and Wildlife Service. The University's investigations concern the biology of the king crab, while the Service's program involves a study of the fishery per se.

OBJECTIVES

1. "Establish and maintain a station in Kasitsna Bay, within Kachemak Bay, to serve as an operational base for studies on king crab."
 2. "In conjunction with biological studies being conducted by the University of Southern California, the Service will study the nature of the crab fishery through determination (by means of log books and personal interviews) of the distribution of the catch by area and season, amount of catch, and effort involved."
- V. A Study of the Movement of Salmon through the Fishery to the Spawning Grounds, Fisheries Research Institute, Seattle, Washington. (No proposal available.)

This study involved the tagging of salmon to determine their paths of migration to the various spawning grounds in Cook Inlet. A contract was let to Fisheries Research Institute to cover this work. They hired a local boat for a purse seine operation, but after several attempts it was found by the boat owner that the risk involved was not worth the money; thereafter fish were tagged from traps at various places in the Inlet. During August, until the time Dr. Thompson cancelled the operation, the men searched the

spawning grounds for tagged fish. Dr. Thompson felt that the cost and effort being expended were in excess of the return value, so terminated the work.

The search for tagged salmon on the spawning grounds was continued by men working for the Bureau of Commercial Fisheries assigned to the Anchorage office.

VI. "Salmon Behavior in the Vicinity of File and Hand Traps in Cook Inlet", Ronald C. Nash, U.S. Fish and Wildlife Service, Anchorage, Alaska, p. 1-2.

"In an attempt to obtain some concrete evidence regarding the supposed delaying effect of Cook Inlet traps upon salmon migrations, a trap delay study has been set up for the month of July. Four traps in the Clam Gulch area were selected as being fairly typical of Cook Inlet traps. The traps are: AYB Corea Bend, Watchmen John Kelly; GIP #8, Watchmen Vic Kelly; LML Waterfall, Watchman Larry Oskolkoff; and AYB Clam Gulch, Watchmen John Hanson. Co-operation has been excellent with the watchmen and the company representatives.

"Several trips were made to Clam Gulch to make arrangements with the watchmen. The major item was the proposed modification to GIP #8 and the fees required for making the lifts during the closed periods. Shortly after most of these details were arranged, a final conference with Mr. John Garrett and Mr. Howard Baltz disclosed a complete lack of funds and a new program was initiated. The present plans call for tagging and releasing of salmon at various times prior to and during the fishing period. No trap modifications are involved. One trap (GIP #8) will be fished during the closed period to obtain fish for tagging. The watchman, Vic Kelly, has agreed to make the necessary lifts (probably two per week) for \$100.00 per week. Retain catches from the area surrounding the traps concerned will be analyzed in an effort to determine a correlation to milling and delay caused by trap leads. Buck Stewart will contact the individual setnetters and provide me with a list of names. Forms to record catches by period and species will be provided for the setnetters concerned.

"Objectives of the 1957 Cook Inlet trap study are:

1. To determine if migrating salmon are being delayed by trap leads or the present method of opening the heart walls during a closed period.
2. To determine the duration of the delay, if present.

3. To determine any variations in setnet catches due to relative position to traps and any milling effect.

4. Incidental information:

- a. Migrational patterns and rates of tagged salmon.
- b. Species of fish other than salmon taken in traps and their condition.
- c. Species and numbers of fish gilled in trap webbing.
- d. Effects of holding tagged salmon prior to release.
- e. Desirability of spaghetti tags compared to Peterson tags used elsewhere in the Inlet.

METHODS OF OPERATION

"All species of salmon will be tagged with plastic spaghetti-type tags and 50 released at each of four release points during each release period. Tag material and 14 spaghetti tagging needles are on hand. 200 tags have been made up and the remainder will be done by the crew during their slack time. A 10'x10'x8' live box, 2 tagging cradles and a live tank section in the skiff are still to be completed. A composite for the crew has been selected just off the Clam Gulch access road. This site is close to usable water, beach access and the Clam Gulch store. A cash reward of 50 cents will be given for the return of tags with information as to date and location of recapture and type of gear used. Cash for rewards will be furnished to project personnel, area streamguards, Kenai FWS office, and the Anchorage FWS office."

VII. "A Study of Proposals to Reduce Fishing Effort in Cook Inlet During 1957", Special Management Study 56-2, Donald L. McLaren, John T. Garrett, Howard Tait, U.S. Fish and Wildlife Service, Juneau, Alaska, p. 1-3.

"Cook Inlet red salmon runs have been stable and have produced at a relatively high level of productivity for many years. In 1948, the fishing effort increased by about 25%, and almost doubled through 1950. In 1951 and 1952 efforts were made to reduce the increased fishing effort brought about by the addition of a new form of gear, the drift gill net. The regulations reduced the weekly fishing period, and, since 1952, fishing periods have been approximately 48 hours per week. When the runs appeared favorable, an extra day's fishing was provided during the peak of the run.

"The result of this heavy effort over a short weekly period cannot be absolutely assessed. Nevertheless, a comparison of the red salmon escapement into Fish Creek (Figure 4) shows that during the late 1930's the average escapement into the system was about 150,000. For the period from 1942 through 1948 the wire was not put in, but from 1949 to the present the average escapement has been around 50,000, or about 1/3 of that during the earlier years when the production of the red salmon from Cook Inlet was stable and at a very high level. It will be noted that during 1956 there was a slight increase in escapement over the preceding two years, but still escapement in 1956 was low. Escapement figures for the other tributary systems of Cook Inlet show approximately the same thing.

"The feature about the present management which gives us cause for concern is that it harvests the runs of fish in an uneven manner. The concentrated fishing over a very short period of time tends to over-fish some stocks of fish while allowing others to escape unharvested. Cook Inlet red salmon runs consist of a large number of relatively small runs, each contributing to the total red salmon harvest. It is reasonable to assume that these runs do not mix homogeneously as they move through the Inlet towards their natal spawning grounds and that the fishing effort can and does harvest the runs in a haphazard rather than in a uniform manner, causing overharvest of some runs and underharvest of others. This leads to an uneven seeding in the various spawning tributaries.

"In order to correct this, we proposed at the 1955 hearings that, during 1956, studies be made of the fishery and a reduction in effort be attempted. We have made these studies and proposed at this year's hearings in both Alaska and Seattle that a one-third reduction in the beach gear be instituted in the Inlet in 1957, and the comparable reduction in drift net gear, largely brought about by area licensing in 1956, be maintained. Further studies have brought out that a great many complications exist in the ramified, complex Cook Inlet fisheries. Not only are there three major forms of gear—traps, drift gill nets, and set gill nets—but the set nets themselves, for example, are made up of a complex of various kinds and sizes which fish the various species of salmon differently.

"We have concluded that, although difficulties are involved, regulated reduction in fishing effort during 1957 is proper and necessary but premature. After studying the results of our hearings, consultation with set net groups, hand trap operators, pile trap operators, cannery men, and drift gill netters, we feel that our best course for 1957 lies in attempting to hold fishing effort at the 1956 level while working further towards an equitable reduction in gear.

"The recommendations which are being submitted for 1957 incorporate the principle that set nets, drift nets, pile traps, and hand traps have a certain relative red salmon fishing efficiency. Since set nets are a dominant form of effort in Cook Inlet, we have designated one set net unit or one total registration of gear operated for 24 hours as one unit of effort. We have studied the relationship between the catch per day of red salmon by various forms of gear for the past four years and have arrived at the following designation of units of effort:

- 1 pile trap equals 8.5 set net units.
- 1 hand trap equals 4.0 set net units.
- 1 drift net equals 2.0 set net units.

"In 1956, the total red salmon fishing effort was 163 set nets, 276 drift nets, 13 pile traps, and 82 hand traps, which when equated to red salmon set net units, equaled 1,293.5 (1,290) units.

"In order to maintain at least the present red salmon management in Cook Inlet in 1957, if between July 1 and July 28 not more than 1,269 set net units are registered to fish in Cook Inlet, 14 hours fishing per week will be allowed. If the units of gear can be reduced, then additional time per week can be allowed. On the other hand, if the units of gear increase, then less fishing time will be allowed. Following is a proposed table for fishing time related to the number of units of gear for 1957:

Gear Registered (Net Net Units)	Fishing Time Allowed (Days per week)
1540 -	1.0
1290 - 1539	1.5
1050 - 1289	2.0
880 - 1049	2.5
770 - 879	3.0
700 - 769	3.5
650 - 699	4.0
649 -	5.0

"Figure 7 shows the relationship between effort and days of fishing. The data upon which this Figure was derived are largely empirical and need further correction and analysis. Nevertheless, it is the best evidence and data available. It is obvious that should any one kind of gear increase in the Inlet the red salmon fishing time per week between July 1 and 28 will be reduced. *Contra costa*, if the effort is reduced, then fishing time per week increases according to the table.

"The purpose of this regulation is to prevent further increases in the fishing effort on Cook Inlet from aggravating the disproportionate harvest of red salmon that seems to be taking place at the present time. The Service is not dropping its hope to effectuate in the near future a reduction in effort and an increase in the amount of fishing time per week. We are coupling the 1957 proposals with greater research effort and intend to activate a strong research program in 1957 designed to study the rates of migration and time of migration of the various runs in the Inlet.

"Further studies and refinement in the enumeration of spawning escapement and a study of the factors affecting the fresh water survival of red salmon are high on our list of priorities for research projects in Alaska."

FIGURE 7

COOK INLET RED SALMON
GEAR vs. TIME
1957

